

WHITE PAPER

Emerging use cases for Digital Asset Management

A white paper exploring unconventional, non-traditional applications of DAM technology

by Theresa Regli



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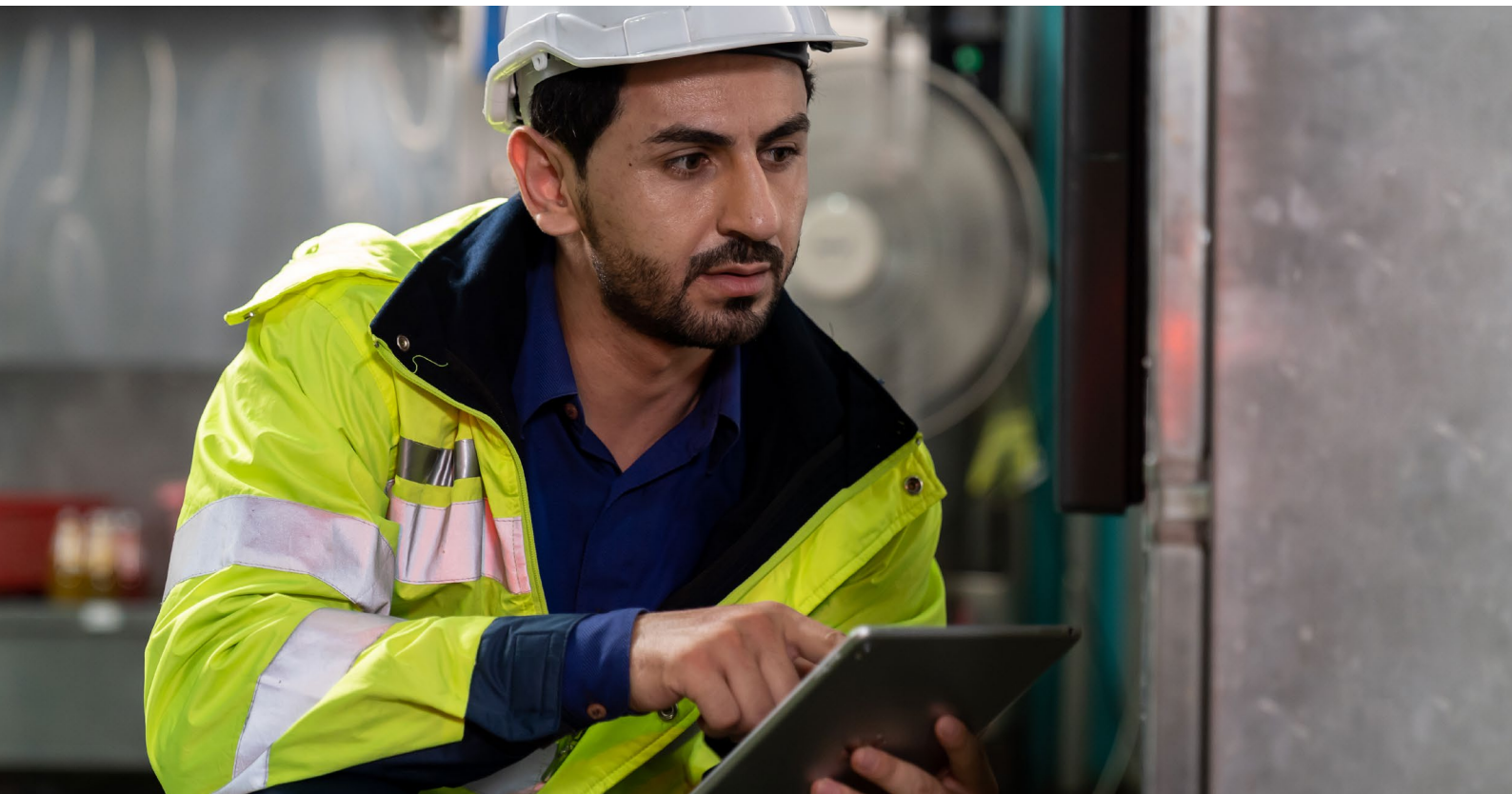
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Executive Summary

The technology and discipline of Digital Asset Management (DAM) evolved to meet specific needs for rich media management in publishing, broadcast media and brand marketing. As DAM grew in prominence, its use broadened into areas such as creative operations, heritage preservation, education, and ecommerce. In recent years, two trends emerged that create opportunities for DAM to deliver value outside these traditional use cases. Firstly, rich media assets are created more widely across every organization: it's no longer just marketing and ecommerce holding the camera. Secondly, organizations discovered new ways to use assets to identify and resolve problems, improve efficiency and collaboration, and make better decisions.

Here we present ten use cases that push the boundaries of Digital Asset Management, uncovered in conversations with OpenText™ Media Management™ customers. From product development to evidence management, these use cases demonstrate the potential value extracted from effectively managed asset repositories. Of even greater potential value are the component micro-services of a DAM system, such as video transcoding, metadata management and workflow automation, when made available to other applications.

A hybrid-headless DAM platform makes these micro-services available to other systems, while providing a functionally rich user interface for a core group of DAM specialists to conduct governance and librarian activities. While this arrangement allows for the wide application of DAM capabilities across and beyond the organization, it also introduces significant challenges such as: dealing with a wider range of inputs; defining rules for data control and synchronisation; duplicating or caching assets across systems and how to deploy and configure an integration layer.



“Microservices are specialized, autonomous modules that can be assembled to create an application or connected to other applications to extend their capabilities. A microservices architecture enables agile, scalable and adaptable applications that enable the dynamic, consistent experience that today’s global businesses require.”

Digital Asset Management (DAM) as both a technology and a discipline is nothing new—in fact DAM software tools have been around for over twenty years. Originally, DAM systems were developed for very targeted print publication and media management use cases. As I illustrate in my book, *Digital & Media Asset Management: The Real Story about DAM Technology and Practice*, there were four primary paths of vendor evolution that began as early as the late 1990s (see image, below). DAM systems targeted output channels such as brochures, print advertising, newspapers, catalogues, or television broadcast-oriented episodic television. Around 2010, digital-only oriented DAM systems crept on to the scene to support online marketing. This fourth path of vendors targeted online brand marketing scenarios.

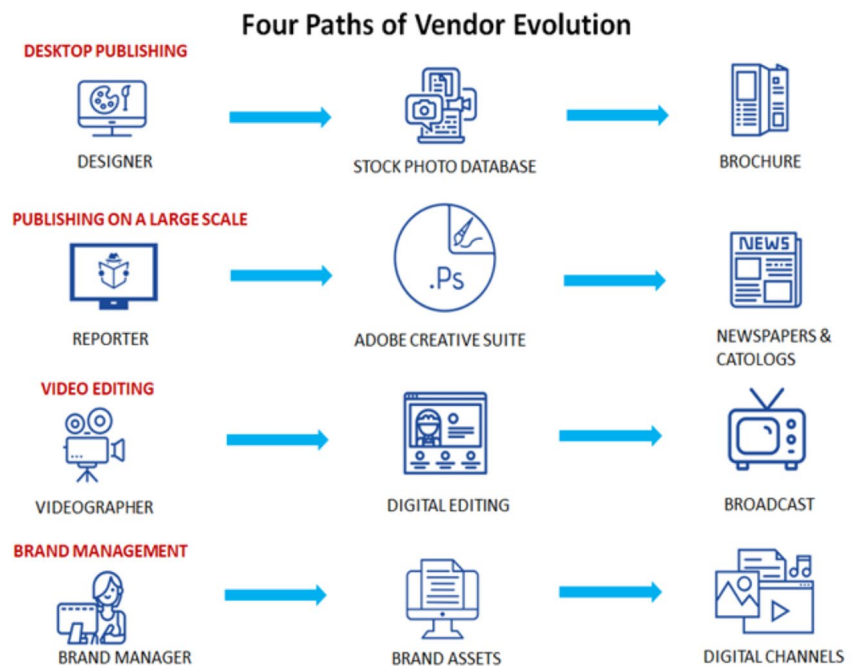


Image source: *Digital & Media Asset Management: The Real Story about DAM Technology and Practice*, Rosenfeld Media, 2016

OpenText’s Artesia, now reinvented as Open Text Media Manager (OTMM), was one of the first DAM systems on the market. In the early days of DAM, during the time when online video and audio streaming was a new and exhilarating concept, OTMM gained a reputation for supporting some of the largest media management implementations for broadcasters.

Conventional DAM—that is, DAM software that exists either on its own or as a function of other types of content and/or marketing technologies, is now a commodity. Large-scale, enterprise DAM requires a platform-oriented and highly componentized approach, one that enables new use cases beyond publishing, marketing, and broadcast scenarios.

“A Digital Twin is a digital model of a physical object. They are used in product development as an alternative or supplement to physical prototypes and can accelerate design iterations. They are also used to create product photography without needing a physical sample and assist support teams in troubleshooting and repairs.”

Taking DAM beyond Publishing, Marketing, and Broadcast

Now that media is omnipresent across all business verticals, it's clear that DAM functionality needs to be everywhere, too. Best-of-breed DAM technology has been reimagined as a platform for new use cases that require media management; most are not marketing scenarios.

It's largely enterprises themselves who have driven the innovative new applications of DAM. Sometimes it's driven by necessity—when there simply isn't a good enough technology to meet the need at hand, a semi-appropriate platform (one that may not fit the need out of the box) is extended to solve the problem. Flexible, extensible DAM platforms often fit that bill.

Let's have a look at some of these new, unconventional DAM use cases.

DAM for Operations

The challenge: A manufacturing firm that builds and sells precision scales used in scientific and commerce environments needs to send staff people into the field to repair products. When the repair person arrives on site, they need detailed images, specifications, and repair instructions in order to accurately fix the product, and also order a part or check off what's been completed.

The solution: when a DAM system is used in tandem with (or as a part of) document or “ECM” technology, it can be applied specifically for facilitating repair operations. Product data, imagery, even detailed CAD and “digital twins” can assist a repair person at the customer facility to reduce burden on call centers and eliminate the need to travel with cumbersome manuals. This scenario requires heavy reliance on workflow functions as well, so that maintenance steps and repairs are logged. Integration with Enterprise Resource Planning Systems (ERPs) like SAP is also highly likely in this scenario. Sometimes this is referred to as xECM - Extended Enterprise Content Management.

A DAM system could for example provide the capability to manage image files in product-centric collections, zoom in and rotate 3D images, and send a bill of materials with required parts marked up to the ordering stage of a workflow.

Digital Workplace and Employee Training

The challenge: Intranets, more recently dubbed “digital workplaces”, require a wealth of visual information and media, with a large number and diversity of applications delivering the full breath of employee needs. Oftentimes digital workplaces are built using Web Content Management (WCM) or document management technology that is comparably poor at managing imagery and video. The need to manage employee headshots, training videos, office plans, even pictures of the daily cafeteria lunch is vital to ensuring digital workplaces are engaging and useful.

The solution: DAM applied as a service to other applications, including digital workplaces and externally-facing web sites, is a modern approach of increasing prominence, especially in large enterprises. The DAM system holds the single source of all images and video, and downstream applications source and pull the most recent versions of the media in the correct format (the DAM may even convert the media on the fly, based on the destination channel). OpenText calls this on-the-fly conversion Adaptive Media Delivery (AMD). This allows optimal centralized media management, as each downstream system “knows where to go” to get the latest & greatest.



ERP and Product Lifecycle Management (PLM)

The challenge: ERPs are inherently a suite of integrated applications, with the goal of streamlining business activities. However, out of the box they don't feature rich media services that might help facilitate material production planning, manufacturing resource planning, or maintenance, etc.

The solution: This scenario may employ DAM services as early as the product development stage. In today's world, people may not be able to make the trips to the factory or manufacturing plant, a product may be designed virtually. Samples may be shipped to an engineer's or designer's home, in a non-HQ, out-of-the-city location. In order to keep production going, 3D modeling, faster iterations, remote prototyping, and virtual sign-off of products is necessary. Virtual product development requires a very precise digital copy of everything that's part of the product, and a single source of truth, which the DAM system can facilitate.

Also useful in this scenario are functions such as secure sharing of asset collections, and simple or more feature-rich interfaces to cater to different user types and use cases.

Digital Evidence Management

The challenge: Unfortunately, crime is commonplace. Because of the omnipresence of mobile phones, crime is often captured live in real time by citizens, or in passing when evidence is found (for example, fly tipping detritus left on the side of the road). Private investigations, CCTVs, or police on the scene with body cameras—these situations create extensive rich media evidence. Dealing with the scale and complexity of evidence in rich-media formats (images, video, and audio) is one of the key challenges in evidence management for law enforcement and security organizations today.

The solution: Law enforcement agencies can use a single, centralized repository for digital evidence, which reduces or eliminates the need for detectives to use multiple systems to collect, log, or access evidence. A variation of OpenText Media Management called Evidence Center is used by a European national police force as a DEMS (Digital Evidence Management Solution). This use-case-specific adaptation of the platform enables editing, annotation, and links to AI and digital forensics.

Another extension of this scenario is to provide a government or citizen portal, where user-generated content can be submitted to the DEMS. Implicit metadata such as geo-tags for location allow automatic correlation to police or detective evidence.

In this scenario, there's often proprietary formats of video taken by many different camera technologies. A DAM can facilitate transcoding of all assets on ingestion, allowing for ease of access by police and investigators who are assigned to the case.

Customer Service & Support

The challenge: Product companies are required to run call centers to provide customer and product support. Content such as product specifications, imagery, and warranty information may need to be accessed and/or provided during a customer service call. This is most efficient if accessible via a single call center application, however those applications often aren't particularly suited to media management and quick access.

Case Study Solution: A furniture retailer with several hundred stores in the Southeastern USA and a nationwide ecommerce service has embedded OpenText Media Management within their retail and service operations. Photography, how-to videos, and product instructions are all stored in the DAM system. These materials are provided by third parties as well as created by the retailer's support teams. The retailer uses OTMM as the backbone of the customer support infrastructure, so teams can access support documents via the DAM, enabling rapid troubleshooting of customer challenges. Using Adaptive Media Delivery, an OTMM module that enables the retrieval of assets renders by url, assets are also made available internally to employees at the brick-and-mortar stores, decoupling delivery while still maintaining control of the single source of truth.

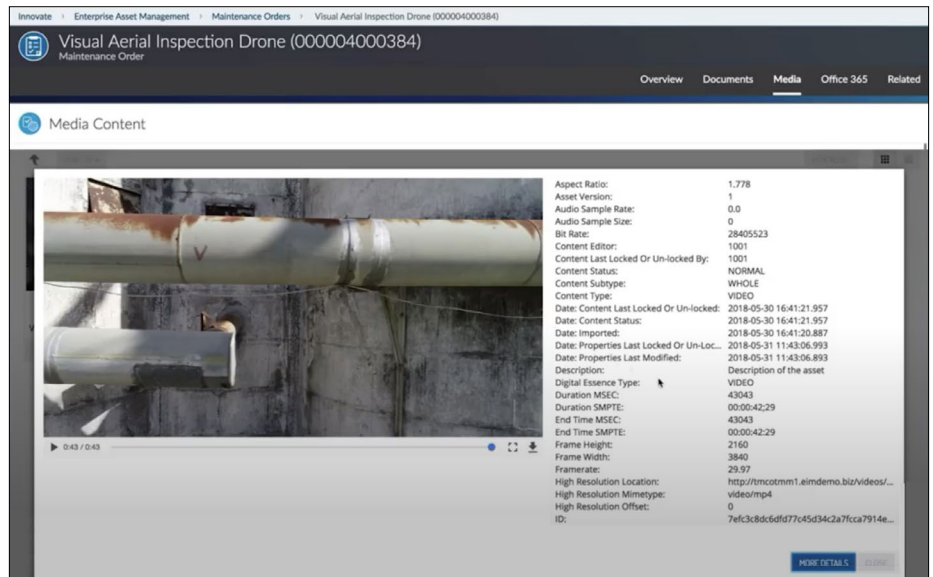
It's perhaps a good moment to point out, again, that this is possible based on customizations and a platform-based approach that leverages DAM microservices. The DAM system provides features such as content and document componentization, product-based collections, and role and group management for targeted distribution.

Building, Quality, and Safety Monitoring

The challenge: A tremendous amount of media is created by drones and CCTV cameras, in particular footage of construction, building, and utility sites, mostly for safety monitoring purposes. Safety data is then generated and needs to be accessed by engineers and repair workers. To ensure the proper function of a building, bridge, or construction project, the ability to monitor the maintenance or the quality of what's going on is vital.

The solution: A DAM system can be used to keep track of an individual operation, or multiple simultaneously. Media can be sent directly from a camera or drone and be ingested into the DAM, while workflow is used to track degradation, repairs, or improvements throughout the process.

Another OpenText client is a large freight railroad network in North America, managing tens of thousands of miles of track and thousands of locomotives. The company uses cameras on both tracks and trains to generate photography and video to monitor track quality and conductor performance. Video cameras on the front of trains are rolling all the time, and subsequently the recordings are ingested into the DAM. Media is then linked to rules analysis and can trigger workflows, repairs, or conductor rules enforcement.



A video from an aerial inspection drone is available within the DAM system. Extensive metadata is automatically logged based on the drone’s location, and gives a repair person details of the situation and what might need to be fixed. Strict security controls within the DAM limit who can access the material.

Customer Media for Self-Service

The challenge: How-to instructional material is useful and at times critical for the setting up of products. Imagine, for example, the purchase of a child car seat. Setting up such a product correctly and safely could be a matter of life or death. Instructional material varies based on the type of car or situation.

The solution: Instructional media may be accessed by the customer with a smart phone, using a QR code that’s affixed to the car seat. The consumer can then watch a video about the proper way to set up the car seat, without ever having to look at a manual. Related documents can also be linked and presented to the customer based on a SKU. Leading people to media that is educational, instructional, or otherwise helpful to set up or properly used products facilitates ease of use and better adoption.

In this use case, the DAM system provides SKU-based aggregation of relevant instructional documents and imagery. The system can also convert the files for appropriate format delivery to the end user’s device, and provide links to additional information as needed.

Legal and Regulatory Review

The challenge: Pharmaceutical companies, and other industries that are highly regulated, require the detailed review of images and packaging to enable global and regional approval(s). Medical claims are often made as part of pharmaceutical marketing, and they need to be double or triple confirmed as true. These approvals may vary by jurisdiction.

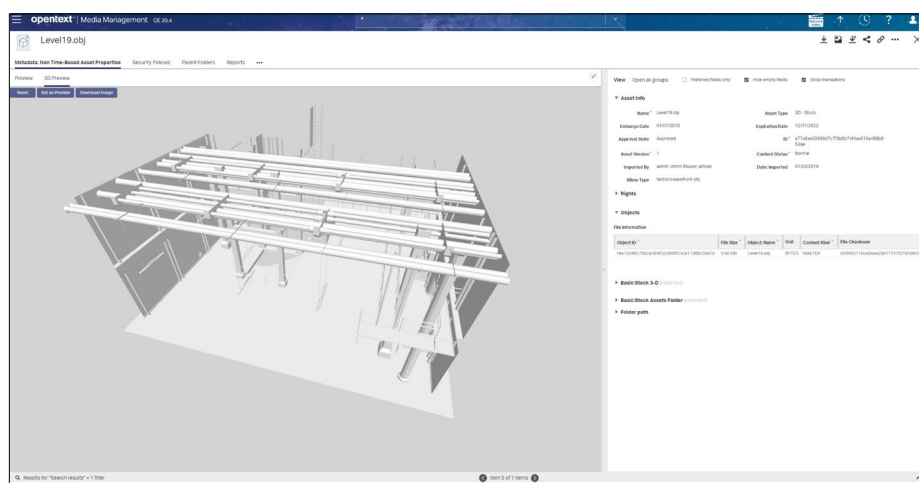
The solution: A pharmaceutical company can choose to couple the MLR (Medical, Legal, and Regulatory) workflow with the marketing workflow. This enables two best of breed use cases to be married together. The DAM service ensures that the latest version of the package is available through the MLR process, with detailed views of every side in addition to the detailed packaging content. Localized versions may also

be available. As with DAM for Operations, this use case requires heavy reliance on workflows, and strict role and group management for granular levels of access. 3D file management, rotation, and markup may also be employed in this use case.

Property and Retail Planning

The challenge: Many companies need to plan for or manage physical spaces in the digital realm. Designing floor plans, virtual rooms, retail spaces, and planograms allow a space to be fully envisioned prior to the actual construction.

The solution: DAM services can take a physical operation and move it into the virtual realm. A DAM system can present and manipulate 3D models in modern formats to design a full layout of a store, a factory, or a room in a house. Related products may even be suggested or placed next to each other automatically in order to stimulate ideas and creativity. Both the stores' and their customers' virtual rooms become realized, saving time in the earlier case, and driving sales in the latter.



A 3D model of the interior structure of a building, including pipes, walkways, conduits and structural supports, available within the DAM system. The model can be inspected in the DAM using rotate and zoom, reducing the need for specialist 3D viewer software.

Sales & Campaign Enablement

The challenge: Every company needs to run a sales and marketing engine while bringing together digital assets in collection that are sales-oriented. These assets are often created by agencies and other third parties, in addition to internal marketing and creative teams. Rather than find and distribute based on inherent file or content characteristics, assets need to be grouped and targeted by marketing themes and customer types.

The solution: A global enterprise software corporation employs a hybrid headless version of OTMM for marketing and sales enablement. Building an application layer on top of OTMM, they have over 20 different user interfaces for over 100,000 users, with 20 million annual asset interactions. These different user interfaces address all the use cases that have sprung up over many years, and the very fluid environment of their sales. The team can quickly adjust to end user needs due to the strict separation of the application layer. These applications use a centralized metadata hub. DAM services such as transcoding are regularly used as a microservice by the downstream applications.

Content teams work in collaboration with sales teams to define use cases around the products, and subcomponents that go with them. There may be reference materials for how a product addresses certain challenges, or white papers that support a sales scenario. Once a scenario is built, all content is accessible in a dashboard. The myriad of user interfaces all use the same DAM repository and suite of services.

Challenges of "Headless" DAM and DAM as a Service

While it may be easy to get excited about applying DAM technology in these new and unconventional ways, with such innovation comes equivalent challenges.

- 1. Dealing with inputs.** In traditional scenarios, DAM systems often ingest assets from hot folders where designers deposit assets, or someone on the marketing team drags-and-drops images from their desktop. These newer scenarios require a more vast notion of "hot folders" where media is delivered and then auto-ingested by the DAM, or uploads from the field over wireless networks. Connectivity and latency can be a challenge, so plan accordingly.
- 2. Real-time synchronization.** With numerous applications potentially making use of the DAM repository or microservices, you will need to make the call on how frequently the receiving application needs to get the most recent image or media. Depending on the nature of the scenario, it may need to be in real time, but more likely it doesn't. You can generally have regular updates at appropriately-timed intervals, so the system isn't overloaded. Data, on the other hand, may need to be synchronized with digital assets more frequently, especially in the case of e-commerce (pricing, inventory, etc.).
- 3. Copies and caching.** The question often comes up, "should I store imagery or media in the downstream app, or should I only store it in the DAM repository which then is leveraged by the other applications?" The answer, inevitably, is "it depends on the situation". For web sites, real-time calls to the DAM, in particular if file conversions or transformations are necessary, could cause latency. Best practice is generally to store the converted and properly sized file in the cache of the downstream system, with the DAM notifying that system if and when a new version is available.
- 4. Deploying a services tier.** For these newer approaches to succeed, think of DAM as less of a system and more of an application layer and a service. Any system should be able to query the DAM with a question such as: "I've got this SKU and I need the primary image for it". And then the DAM can supply that image, or perhaps a JSON package that also includes content, data, or even related assets to that SKU. In modern, enterprise DAM, no other system should necessarily have to host the assets. They can just use them.

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Digital Evidence Management Executive Brief

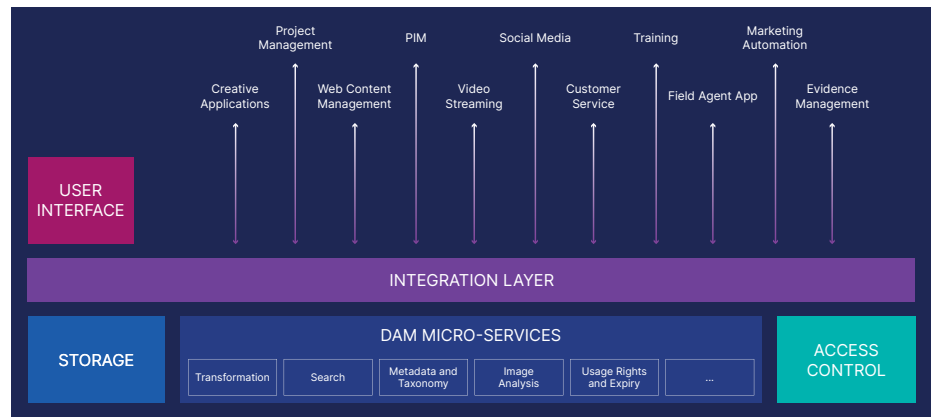


Diagram showing an example hybrid-headless pattern, with DAM Micro-services providing capabilities to multiple diverse use cases via an integration layer. Direct use of the DAM through the application’s user interface becomes an access method for specialist users.

Conclusion

DAM technology is no longer limited to publishing, marketing, and broadcast scenarios. DAM systems and services can now be used everywhere media is found—that is to say, throughout businesses of all kinds. As you evolve your DAM and consider more modern or unconventional use cases, you need an approach that’s headless, provisioning the services to other applications.

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