

Smarter Assets Now

Leverage machine learning for smarter AEM Assets



Summary

For today's organizations, Digital Asset Management (DAM) is a true challenge. What worked yesterday simply will not work tomorrow. Against the backdrop of a changing digital world, brands are rethinking how they manage their assets and are looking to new technologies for future-proof solutions.

The number of digital assets required to support today's digital experiences is growing exponentially. Marketers are producing terabytes of content, whether in the form of images, video, documentation and more, and managing such an enormous amount of assets is becoming a serious pain point for businesses. Asset managers and marketers must find ways to efficiently streamline their content creation, management, and distribution processes. This is where digital asset management (DAM) solutions come into play.

Being ready for the digital future, however, means more than asset governance, curation and best practices. It means going beyond managing your content to unlock the true potential of your DAM solutions. Increasingly, cutting-edge technologies are being developed to optimize DAMs, such as natural language and machine learning. To put it simply: humans can no longer handle terabytes of assets, but machines can.

In marketing, content is king. However, businesses also need to master locating that content, and delivering it at the right time, to the right place. That's why DAM solutions should be at the core of business. An intelligent DAM solution has the power to deliver content 27% faster than previously, empowering asset managers and marketers to significantly boost their content velocity. Content velocity is about shortening the time between creative inception and getting it into the hands of the marketer; it is the speed at which we create, produce and publish content. In today's digital climate, that velocity is accelerating.

“ By tapping into machine learning, it is easier than ever before to manage terabytes of content.

The spectrum of devices and channels that customers engage with has also amplified in recent years. Today's typical customer journey now stretches across a plethora of mobile devices, through different social channels and messaging applications, e-commerce and IoT, creating a need for more renditions of a particular asset. But it doesn't stop there: this demand for diverse iterations of a single asset is increased even further by personalization. To be able to deliver a seamless user experience across devices, new types of content must also be considered such as Augmented Reality (AR) content.



Microsoft Azure Cognitive Services

Microsoft Azure Cognitive Services provides state-of-the-art algorithms to process images and return intelligent data such as keywords and metadata.



Adobe Assets

The digital asset management component of Adobe Experience Manager (AEM), AEM Assets enables organizations to ingest, tag, organize, secure, and distribute digital assets, facilitating improved collaboration between teams.

Digital Asset Management

A good DAM solution will manage content of any type; streamlining metadata and asset distribution; making assets more discoverable at speed; enabling them to be combined in useful ways, and put to use within automated workflows. DAM plays a critical role in the transformation and automation of assets.

The creation and maintenance of metadata represent a significant part of the time and effort spent on managing assets. When organized and categorized well, asset managers are enabled to:

- Increase reuse of assets
- Reduce duplicates
- Upload/download assets faster
- Improve the performance of a digital asset repository

AI & Machine Learning in Asset Management

AI and machine learning are changing the way businesses address asset management by opening new doors for uploading, tagging and finding content. By tapping into machine learning, it is easier than ever before for marketers to manage terabytes of content. For instance, it's now possible to automatically add keywords and tags to assets based on attributes such as colors, objects, faces and more, streamlining the creation of metadata. This brings a level of efficiency to content creation that is difficult for humans to achieve on their own. As such, the introduction of AI in asset management will become incredibly beneficial to those who truly understand what a lengthy, and sometimes tedious, process tagging large amounts of digital assets with accurate metadata can be. We have all heard the phrase "what can be automated, should be automated." It's time businesses reap the benefits of automating metadata creation with AI and machine learning.

Technologies

Adobe are the leaders in Digital Asset Management for customer experience. (Forrester Wave™). The concept that next-generation content needs automating is at the very heart of their vision. Combining cutting-edge technologies with the Adobe Experience Cloud, such as Microsoft Azure Cognitive Services will push the boundaries of how technology can transform digital asset management. Applying machine learning for automated metadata generation will also increase efficiency and findability, augmenting business impact.

Adobe Experience Cloud

AEM Assets is the digital asset management component of Adobe Experience Manager (AEM) and the only enterprise DAM that lets users find, edit, manage and deliver assets in a single solution. It is a DAM solution that can do more than just storing assets; rather it is a global platform to manage all asset versions, rights and permissions, that enables asset managers to deliver those assets with speed and impact.

Azure Cognitive Services

Microsoft Azure Cognitive Services provides state-of-the-art algorithms to process images and return intelligent data such as keywords and metadata. Through Language Understanding (LUIS), a cloud-based API that applies custom machine learning intelligence to natural language text to predict overall meaning, captions are generated by pulling out relevant, detailed information. A confidence score can then be generated (a number between 0.1 and 1.0 that indicates the probability that a given prediction is correct) on certain meaningful pieces of metadata.

Matching the Captions

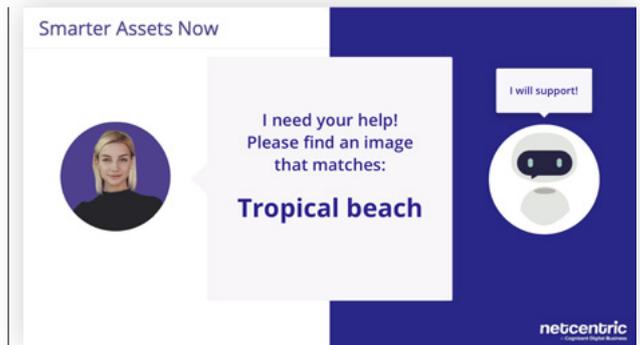
Occasionally, captions produced by Azure are similar, but not identical, and render less than adequate matching results. Therefore, we apply four different types of algorithms to compare the captions in order to provide different matching scores, allowing for more variety within the images.



27%

27% faster content delivery for companies that have implemented an intelligent DAM solution.

Source: IDC



Adobe Summit 2019: The Netcentric showcase demonstrates how the technologies can work together to solve the asset management challenge.

- *Mean* - This removes words that have no meaning (eg. a, in, the etc.). Only meaningful words in the caption are read, in order to eliminate the difference and compare strings.
- *Levenstein Distance* - This is a string metric for measuring the difference between two words.
- *Fuzzy Score* - This works with matches that may be less than 100% perfect when finding correspondences between segments of a text.
- *Cosine Distance* - This defines how similar texts are in terms of word counts, and measures the difference in vectors.

Netcentric Custom Assets inbound API

The Assets Inbound API is a custom Netcentric built API that enables Adobe Experience Cloud to communicate with Microsoft Azure Cognitive Services and work asynchronously. Once an inbound API request hits the author instance of Adobe Experience Manager, the author starts several jobs to process the request. These steps can be tracked using a simple REST request, which could be used to visualize this on the client side. This type of API allows assets to be processed without opening AEM itself. Once the caption is generated by Azure, the Assets Inbound API stores the asset to AEM Author and enriches it by adding the metadata.

Netcentric Custom Asset Outbound API

Once the enriching of the asset has been fulfilled, the results are displayed on the frontend. This means the frontend communicates with the Asset Outbound API to provide the Azure-generated metadata and return it to the frontend. Partial updates on the caption generation by Azure also allow for live matching. Once the author publishes the asset, the frontend is triggered; there is a trigger to the asset outbound API, which delivers renditions and the metadata.

Digital asset management innovation: the Siemens case

Challenge

Siemens content managers were working with a highly fragmented content structure, which made it very difficult to work with assets. Locating, uploading, and collaborating on assets was challenging within an unreliable system with low usability. The key challenge was to implement a new dedicated Assets management system for Siemens with the AEM Assets system as a completely separate entity to the AEM Sites system. This meant implementing two systems on seamlessly integrated, but fundamentally separate, infrastructures.

Approach

Netcentric built a single point of truth. This formed the sole delivery platform for Siemens' content management strategy. Working with a separate asset management solution that could work seamlessly with AEM Sites, two separate AEM installations were implemented, with an author instance on each side, and two publish instances for each environment.

Implementation

This implementation supported the introduction of state-of-the-art infrastructure that could drive best practices in license management, metadata management, taxonomy and rights management. Together with Netcentric, Siemens undertook a successful migration of over 12 terabytes of content. The new Assets system was launched, including the migrated content, with the separate system still pushing content to the legacy system.

Technology

The foundation of this bespoke solution was Adobe Experience Manager 6.3, with the solution running fully in the cloud based on Amazon Web Services. Furthermore, it leveraged Akamai as the content delivery network, BrightCove as a video cloud platform, a Solar search environment and a single page application based on UJS. Finally, it relied on a Shared S3 dataset.

Results & key benefits

A principal achievement of this transformation was the complete separation of Siemens' Sites and Assets infrastructures. The two parallel AEM installations work together, allowing editors to simply drag and drop content into pages, content which in fact comes from an entirely separate installation. Siemens is now equipped with an entirely new and separate digital asset management user interface, which acts as a reliable and clean single point of truth for content, which no longer features duplicate or redundant content.

This asset management platform also delivers a high-quality user interface with an improved user experience. The solution offers greater scalability for Siemens, improved performance along with faster delivery of its website and content alterations.

Conclusion

At Netcentric, we specialize in the implementation of the Adobe Experience Cloud (AEC). One of our areas of expertise is AEM Assets and digital asset management. Considering its robust capabilities and features, AEM Assets is the most powerful DAM solution available on the market.

By enabling AEM and Microsoft Azure Cognitive Services to communicate with one another through the Netcentric custom-built Assets inbound API, we enable marketers and asset managers to significantly reduce time and effort spent on lengthy DAM tasks, by automating metadata generation.

The Assets Inbound API, developed by Netcentric, has already empowered Siemens' content editors. Implementing two separate AEM installations to seamlessly work together has improved visibility, saved time and eliminated many pain points.

This is just one way we support brands facing digital asset management challenges. With the right technology and tools, asset managers and marketers have the potential to accelerate the speed at which they create, produce and publish content. With Azure's machine learning-generated metadata and our Assets Inbound API, streamlining metadata and asset distribution becomes more efficient than ever. Combining these cutting-edge technologies helps brands redirect time and resource investment away from tedious asset management tasks and towards building long-term business impact and enhancing productivity.

Is your DAM future-ready? Unlock the true potential of your solution with Netcentric.

Netcentric can help you optimize and customize your DAM solution with machine learning. Get in touch to learn more.

Resources

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