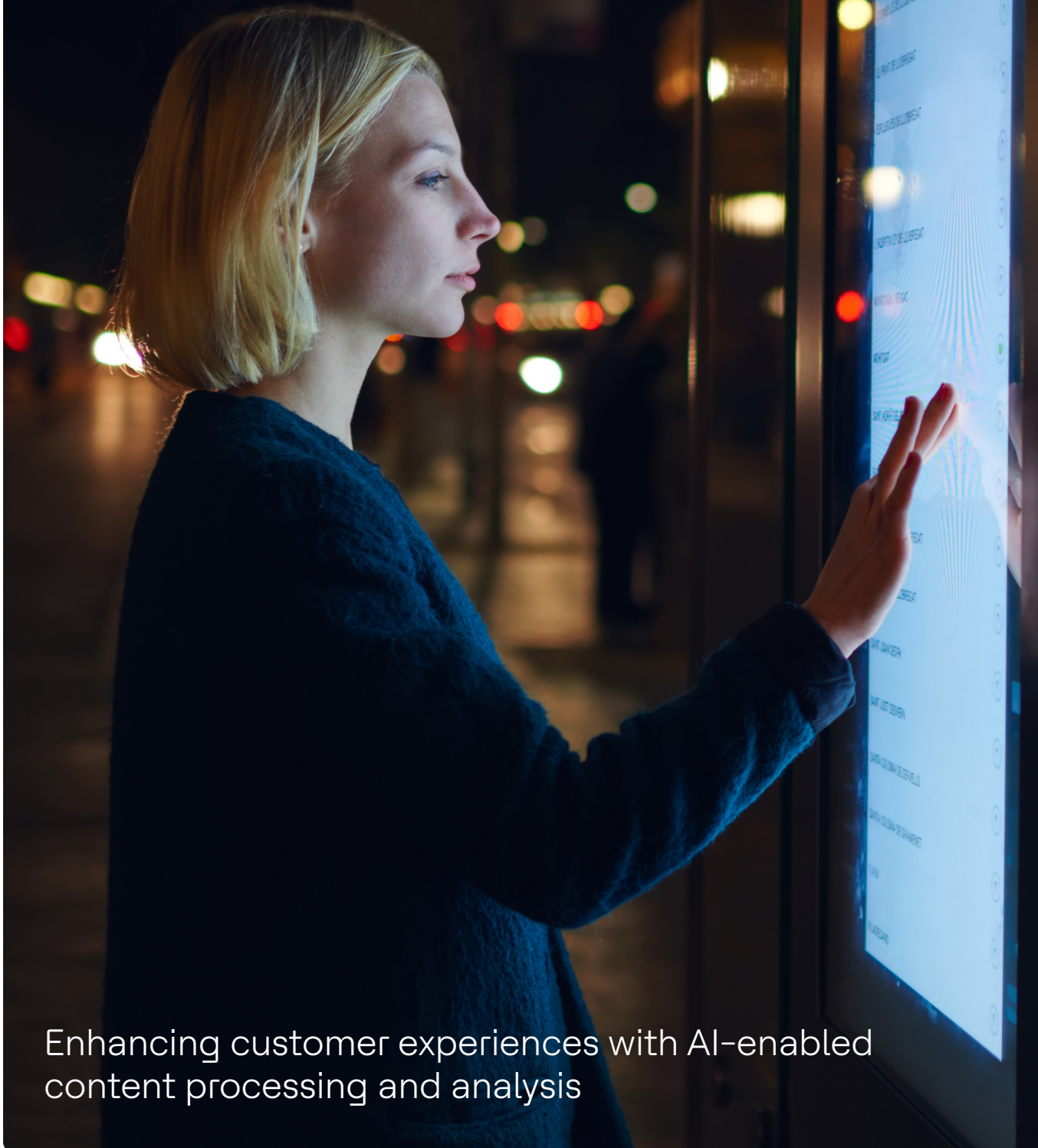


Future of Content Ops: AI-assisted content management

Enhancing customer experiences with AI-enabled
content processing and analysis



Introduction

With artificial intelligence (AI) now becoming one of the hottest topics in technology, we are at an unprecedented time around information management, particularly web content management (WCM). Never has a particular technology held so much promise, yet so much hype and misunderstanding.

This whitepaper explores the rapidly evolving role that AI and machine learning (ML) technologies play in content management. The paper reviews some available AI offerings and their practical application for enabling better access to critical information. Discover real-world use cases and how early adopters get business value out of these technologies. This paper will help you understand the essential enterprise considerations for getting started with AI and Content Services.



The challenge of content and promise of AI

Not only is content inherently hard to manage, but the volume and types of content are also growing at an unprecedented rate. Many enterprise organizations have accumulated over 10 billion documents and scanned images over the last 20 years – an impressive amount of content. But today, they're looking to capture and manage more than 500 million new objects per month. They will double their entire corpus of content in the next two years.

Content, in general, isn't difficult for a human to understand. We consume content every day without even thinking about it. The challenge is that the things we do naturally – quickly classifying content to determine what it is, identifying critical information and data within it, and perhaps determining if

vital corporate information needs to be preserved – don't scale well. Extracting knowledge from content and entering it into fields and tables is work people inherently don't like. And doing this work across 1000s or even 100s of 1000s of latest content assets daily is challenging, expensive, and difficult to do with consistent accuracy. Therefore, many organizations have long struggled with content management systems (CMS). With the advent of AI and machine learning, we've found a way to process content as a human does, but at a massive scale. We can use a range of services to extract critical information from content and, in doing so, transform content into intelligent data that can be easily found, readily used to perform work, and accessible at anytime, anywhere, and on any device.





What is AI-assisted content management

Artificial Intelligence (AI) has proven helpful in modern business practices, including web content management. AI web content management describes the inclusion of machine learning into digital experience platforms, which means a device helps you centralize and organize your content.

AI is a critical technology that helps marketers make better decisions and helps content managers better engage their audiences through content. AI can turn uninspiring, generic content into personalized, content-driven experiences that are more meaningful to audiences. Since AI is evolving rapidly, companies need the flexibility to use the latest and greatest tech as it becomes available.

Until recently, the applicability was limited, but services that enable you to use AI in

content management have popped up extensively, from automatic content tagging to automated translations. AI content management is a super valuable addition to your workflow.

In the future, we expect many digital teams to turn to AI content management. It not only helps you improve the findability of your content, but it also takes some of the time-consuming tasks off your plate. Developments that we love are automated content features, such as assisted content creation (automating the research process when writing content) and automated meta-data. We also love AI-driven analytics and optimization.

Benefits of AI-enabled content management

AI is changing the world by reducing costs through automation and enhancing customer experiences. AI can be used everywhere. In content management systems, AI can be used for content processing and analysis. There are several ways in which AI has already begun to impact today's content management systems. Below are the most notable ways.

1. Automatic image tagging

Image tagging is essential, especially for e-commerce platforms or royalty-free stock image sites where hundreds of images are uploaded daily. Success depends on displaying accurate and highly relevant results to the searched keyword.

Until recently, automatic image recognition lacked the precision required for the task. However, the next generation of AI-powered image recognition and tagging tools can analyze images in seconds. Many platforms have started embedding these tools for keyword metadata enhancement, and this trend is likely to accelerate.



2. Personalized content and marketing

AI algorithms can track individual users' behavioral patterns and use such data to predict future needs and expectations. This capability helps marketers deliver personalized content to boost customer engagement, satisfaction, and revenue.

3. Smart content analysis and categorization

AI can analyze the tone and sentiment of content and suggest if it is suitable for the intended audience.

This is important for helping content managers quickly determine whether a piece of content is suitable for their audience or needs some tweaking before it can engage the intended consumer.

IBM Watson and MonkeyLearn, for example, have developed intelligent systems that leverage natural language processing (NLP) to provide text intelligence services such as language detection, keyword extraction, profanity detection, news categorization, sentiment analysis, and so on.





4. Accelerated content creation

AI cannot yet create completely original stories. However, its capabilities, including those of natural language processing (NLP) and natural language generation (NLG), can help accelerate the content generation process. AI is already helping with content translation, video, and audio transcription, auto-tagging and metadata creation, grammar checks, and content protection.

5. Voice-controlled platforms

In less than a decade, AI-assisted voice services have gone from fantasy to reality. Services such as Apple's Siri, Google Home, Amazon Echo (Alexa), and Microsoft's Cortana are increasing the productivity of millions of people every day. Many content management platforms provide voice-assisted services, including voice-to-text and voice commands.



6. Content intelligence with AI

The term content intelligence refers to using AI to analyze and determine the effectiveness of content and provide actionable insights for a business' content management strategy. Most companies need to develop a plan for content management that can help them manage all the content required to achieve the goal. Content intelligence helps companies recognize the path to creating, managing, and executing successful content with minimum manual work. The most appreciable part of content intelligence is that it provides the same results to businesses of all sizes by playing a pivotal role in managing operations.

Use cases with AI-powered content management

In content management, the quest has always been to infuse intelligence around content and extract more value from it. However, for many organizations, content counted more in the cost column than on the asset side. But thanks to recent advances in machine learning, we are now at an inflection point in content management. More specifically, improvement in areas of natural language processing, natural language understanding, text analysis, image recognition, and video processing – all places which traditionally have not been the strong point of content management technology. There is also a democratization of sorts happening in the AI field – in the sense that many of the new capabilities are available packaged as easy-to-use APIs, which decreases your time-to-market.



Here are some of the AI & ML use cases for different modules of Content Management:

Web content management:

- Micro-targeting and personalization of content during content delivery
- Content recommendations and dynamic content generation for website visitors
- A/B testing of alternative versions of content items and automatic serving of successful variants to increase customer engagement and conversions.

Cloud storage:

- Enhanced security through identification of sensitive content using automatic content classification (e.g., confidential documents, personally identifiable information) and prevent their inadvertent exposure
- Better data loss prevention by raising alerts when improper or suspicious content access patterns are detected



Marketing automation:

- Real-time promotions and customized offers based on better customer segmentation
- Virtual assistants and chat bots to make customer journeys more interactive
- Enable omnichannel customer journeys through the integration of online and offline customer touchpoints
- Analytics and attribution models of different marketing channels and campaigns to help prioritize marketing budgets

Digital asset management:

- Automated tagging and generation of metadata for images and videos
- Generate labels that describe images and identify text occurring on images
- Identify critical moments of interest in videos
- Search within videos for specific content (e.g., people, scenery, background)
- Automated conversion of text-to-speech and use the transcripts for video search

Enterprise search:

- Topic clustering and content categorization to enhance the relevance
- Support Natural Language Queries in search
- Allow access to content repositories via voice interfaces and commands
- Visual Search of Image Assets

Web content management:

- Recognize the tone and sentiment of articles to ensure messaging consistency and alignment with brand positioning
- Automated topic generation helps identify which topics are overrepresented or whether any desired issues are missing from your content corpus
- Analytics of content performance to provide insights for future editorial decisions

Adobe Experience Manager (AEM) powdered by Adobe Sensei (AI)

One of Adobe Experience Manager's most significant advantages is the power of Adobe Sensei, Adobe's artificial intelligence and machine learning technology. AEM uses Adobe Sensei throughout to automate asset management, manage and reuse content, build targeted experiences for different audiences and delivery formats, and moderate social communities while delivering customer experiences at a massive scale.

The essential features of Adobe Experience Manager powered by Adobe Sensei include the following:

Smart tags	Smart crop	Visual search	Automatic text summarization	Expert scoring
Powered by Adobe Sensei AI and machine learning, the smart tags tool understands an asset's content and tags it with intelligent, business-specific keywords automatically	Eliminate tedious editing jobs with the intelligent crop. This automated process detects the focal point of an image or video and automatically crops to it using AI powered by Adobe Sensei.	Sometimes, it's hard to express what you're looking for in an image search. Wouldn't it be great to use an image as your search query and say, "find all images like this one"? Visual Search, powered by Adobe Sensei, offers you just that.	Use Adobe Sensei's natural language processing technology to summarize text automatically for smaller screens. You can easily create text once and reuse it within your cross-channel experiences.	Expert Scoring, powered by Adobe Sensei, applies the power of AI to find out just who your topic experts, buzz creators, and community influences are and automatically identify and reward them on your site.

Adobe Sensei and Experience Manager deliver on the promise of power, flexibility, and adaptability in creating and managing digital customer experiences at scale:

- Provides the intelligence to find and surface hidden images in your asset library and automates the time-consuming process of producing and managing cropped versions for every delivery format you need
- Helps fit your text to your delivery format and identify and reward your best contributors
- Empowers you to find and use your best social media content and moderate your user community

Adobe Sensei takes on the tedious and daunting aspects of managing your content. It allows you to focus on delivering the right experience for your customers, in the right channel, at the right time



In Conclusion

Content management systems that integrate AI can make business processes more efficient, allowing companies to save time and money and enhance customer experiences, content processing, and analysis. In the future, organizations could see AI advance into real-time SEO recommendations, which would be a game-changer. Imagine a content management system that can identify keywords in real-time, making suggestions based on your competitors. It could tell you, for instance, what terms or keywords you should use and which ones you should avoid. Or even better, you could trust the CMS system to automatically update keywords without your content, saving you even more time. One of AI's significant advantages is how it can be applied to visual content. Image websites cannot possibly tag and categorize every single updated image daily. So, this is where AI takes over, performing tasks that would require several hundred employees.

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