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Engage your audience with machine learning-powered experiences

How machine learning is transforming the media and entertainment industry

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Meeting big expectations

The media and entertainment (M&E) industry is growing at a staggering pace, with customers consuming more content than ever before. According to PwC's Global Entertainment & Media Outlook, global revenue from over-the-top (OTT) video is projected to grow at an annual rate of close to 15 percent through 2024. The markets for many other media segments—including virtual reality (VR), video games, internet and out-of-home (OOH) advertising, music, radio, podcasts, and digital books—**are all expected to grow, as well**.

The distinctions between print and digital, video games and sports, pay TV and OTT, and social and traditional media are blurring. Consumer expectations of nearly endless content choices anytime, anywhere, and on any screen are driving business and operational changes. To succeed in this new environment, M&E companies need to deliver premium content in a cost-effective manner to an audience that is engaged with the brand.

In this eBook, we'll demonstrate how your company can achieve these goals through machine learning-powered solutions—and provide examples of other businesses in your industry that are creating fascinating, captivating experiences with machine learning today.

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Challenges that M&E companies are facing

To remain successful, today's M&E companies must find innovative, cost-effective ways to overcome a number of challenges.

Respond to new business models

Consumer behavior toward subscription and one-off content purchases keeps shifting, making it difficult to sustain any one revenue model. You may need to look at entirely new ways to drive direct-to-consumer approaches for growth.

Scale internal processes

Manual processes such as finding where end credits begin, choosing the right spots to insert ads, or breaking up videos for better indexing are expensive and slow. They also cannot scale to keep up with growing content volumes. At the same time, tasks like subtitling and metadata extraction are increasingly time-consuming and labor-intensive. Thousands of personnel hours are often spent tagging, labeling, captioning, and reviewing media assets.

Create new consumer experiences

Consumers are increasingly expecting new forms of media to engage with and new ways to consume content. Meeting these demands requires rapid innovation at scale. Many companies are looking to personalization as part of the solution, as personalized content has a higher chance of being consumed and leads to longer engagements.

Using machine learning to address these challenges

From video and music streaming to internet advertising and sports, machine learning is playing a key role in accelerating content creation and curation processes, increasing consumer engagement, and improving monetization options for M&E companies.

Let's take a look at a few introductory examples of how machine learning is enabling positive business outcomes for M&E. We'll provide more specific use cases in the next sections.

VIDEOFASHION!

Videofashion uses **Amazon Rekognition** to automatically index more than 18,000 hours of footage and catwalk coverage for its archive of 3,000 programs. It is now easier to search content and drive revenue—all while reducing the time required to analyze, identify, and tag content by 88 percent.

Learn more about Videofashion ›

Discovery

Discovery, a multinational mass media company, uses **Amazon Personalize** to enable tailored content suggestions for its Discovery+ streaming platform across more than 50,000 episodes of shows from their various TV brands like Food Network, HGTV, TLC, and more. This enhanced customer experience enables customers to find curated content that matches their specific interests.

Learn more about Discovery ›

THE WALL STREET JOURNAL.

The Wall Street Journal, a global provider of news and business information, uses **Amazon Kendra** and natural language search to empower readers. Talk2020, an intelligent search tool, helps readers quickly search and analyze 30 years of public statements made by presidential candidates. Powered by reliable enterprise search capabilities, they can simply ask plain-language questions to find out what the presidential candidates have said on a wide range of issues and topics.

Learn more about The Wall Street Journal ›

Improving customer experience

Machine learning enables you to more accurately measure and predict consumer actions and intent, helping you to keep customers engaged and give them more of what they want.

Personalized content recommendations

Personalization helps deliver the real-time, curated, omnichannel experiences that today's consumers expect. Machine learning is helping by analyzing disparate data in ways that can predict consumer behavior and provide customers with personalized content choices.

To remain competitive, today's M&E companies need to personalize content for all users—even those who are just signing up. With **Amazon SageMaker**, **iHeartMedia** analyzes registration information to create a personalized listening experience in real time, reducing churn and **improving the user experience**.

Content moderation, compliance, and quality control

Machine learning enables you to moderate user-generated content at scale, enabling automatic detection and censoring of inappropriate content. It can also detect and pixelate faces captured incidentally to preserve personal privacy, such as in news feeds and security footage.

Flipboard needed an automated solution to detect content violations in 1.2 billion images and videos from external sources annually. **Amazon Rekognition** gives Flipboard a robust moderation taxonomy with low false alarms, to prevent unwanted content more efficiently, intercepting on average 63,000 images and videos daily. As a result of lower false-positive rates, the workload for human moderators and **operational costs has also decreased**.

Increasing fan engagement

You can use the predictive powers of machine learning to create new and unique ways to engage your audience, enabling your fans to feel more like they're inside the action.

During each **Formula 1** race, 120 sensors on each car generate 3 GB of data, and 1,500 data points are generated each second. Formula 1 uses **Amazon SageMaker** to help transform that data into insights that fascinate its 500 million global fans—from real-time predictions of race outcomes to calculating the **chances one driver will overtake another**.

Optimizing internal processes

Machine learning can also help streamline a number of internal processes, allowing you to reduce costs, increase productivity, and focus more attention on your customers.

Media analysis, metadata generation, and tagging

By automating the creation of a rich metadata index, machine learning can help you meet rising user requests. With a machine learning-powered digital and media asset management system, it's easier and more cost-effective to deliver specific content in shorter time frames and across a greater number of formats.

NASCAR enhances metadata with Amazon Rekognition, Amazon SageMaker, and **Amazon Transcribe**, saving thousands of hours of manual search time and serving up more relevant video to fans. AWS machine learning helps NASCAR deliver more content, innovate new services more efficiently, and scale **without compromising time and capital**.

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Scene understanding

Machine learning helps identify actors, players, and animated characters, and detect specific activities (goal, foul, car crash, etc.)—and then automatically create a clipping around the detected scenes, which can then be served to editors.

Disney is using deep learning on AWS to understand scenes in animated content, enabling creators to quickly search content using natural language queries. The company is also using the resulting metadata for personalization, delivering **increasingly relevant content to users**.

Media subtitling and localization

Machine learning helps to automate the creation of subtitles, captions, transcriptions, and translations of content, reducing the number of person-hours needed to complete these otherwise labor-intensive tasks.

SyncWords, an AI-powered service that provides automated captioning and translations, uses **Amazon Translate** to deliver real-time translation and multilingual subtitles to live broadcasting in 40 languages. The speed and efficiency of the AWS solution enables SyncWords to provide these services at 75 percent lower cost and **with lower latency**.

Marketing and monetization

Ad personalization and optimization

With machine learning, you can deliver personalized and optimized ads into subscriber video streams based on viewing patterns and other signals.

Browsi, a platform that enables digital publishers to automatically optimize ad placement, uses **TensorFlow**, a popular open-source deep learning framework, on Amazon SageMaker to predict the probability of an ad placement being viewed in real time. These insights allow publishers to optimize ad distribution, helping to ensure the right ads are delivered to the right **audiences at the right times**.

Enhanced monetization paths

Machine learning helps to surface relevant content into monetized media paths—while preserving a great consumer experience.

News Corp Australia, Australia's largest media company with a monthly audience of over 16 million, uses TensorFlow on **Amazon SageMaker** to predict the number of incremental subscriptions a news story will generate. This helps the company more intelligently determine what content **should live behind a paywall**.

Start maximizing the value of your content today

As consumer demand continues to surge, the digital media market abounds with opportunity. Your challenge is to engage new customers, monetize their participation, and build loyalty. AWS offers a number of solutions to meet your needs and help deliver premium content in a cost-effective manner to an engaged audience.

Add intelligence to your applications with pre-trained AI services

- Personalized recommendations (Amazon Personalize)

- Computer vision (Amazon Rekognition)

- Natural language understanding (Amazon Comprehend, Amazon Polly, Amazon Transcribe, Amazon Translate)

- Enterprise search (Amazon Kendra)

- Fraud detection (Amazon Fraud Detector)

Accelerate machine learning with Amazon SageMaker

Amazon SageMaker helps data scientists and expert practitioners quickly build, train, and deploy machine learning models at scale—or build custom models with support for all the popular open-source frameworks, such as MxNet, PyTorch, and TensorFlow.

Leverage solutions purpose-built for M&E

Use the right tool for the right job with purpose-built, easy-to-deploy solutions optimized for M&E workflows. These include **Media2Cloud**, an automated video asset ingestion and metadata tagging solution; **AWS Content Analysis**, a video analytics solution for search, subtitling, and translation; and **AWS Media Insights Engine**, a workflow processor for AWS machine learning services.

How do I get started?

Find an AWS M&E Partner ›

AWS M&E Partners can provide you with guidance through every step of your machine learning journey. **Explore our media intelligence solutions**.

Learn more about AWS machine learning for M&E ›