



MEDIA MAKES MORE MONEY BY BEING MORE DATA DRIVEN



The relationship between content distributors and customers is changing rapidly, which means that broadcasters and distributors increasingly need to leverage data to analyze their business, optimize their operations, and engage their customers. Analytics has paved the way for new customer-focused business models in the media industry that take advantage of data-driven insight. Gone are the days of one-way communication between broadcaster and viewer; today, Over the Top (OTT) Internet-delivered video services are generating huge volumes of data that can be turned into actionable insights, opening up new pathways to monetization using big data, analytics and deep learning technologies, and the underlying cloud infrastructure that powers them. In addition, artificial intelligence and deep learning technologies

are automating content production and broadcasting workflows, reducing time and costs while increasing agility and competitiveness.

Cloud infrastructure services are a key part of the equation as they can be spun up quickly and easily scaled, they are highly elastic to handle spikes and large volumes of data analysis in real time, and they provide a pay as you go cost model that reduces capital investments in IT infrastructure with low operating costs and low overhead. The enabling cloud infrastructure enables data collection and processing at scale, allowing media customers to build behind-the-scenes real time analytic applications that can improve their end users' viewing experience, reduce churn, and create new opportunities for monetization.

The Amazon Web Services (AWS) Cloud offers content owners and distributors on-demand infrastructure that supports key industry use cases ranging from broadcast channel origination and OTT content streaming to big data analytics and machine learning. These big data and machine learning services can be used for things like metadata generation and extraction, personalized content recommendations, and targeted ad optimization. Running these analytics applications in the cloud also means that these next generation technologies are no longer available only to the largest media firms with deep pockets. Any operator delivering content services over the Internet to consumers can take advantage of cost-effective cloud infrastructure for creating tools and features that help to increase engagement and monetization.

And there are real financial benefits to integrating data analytics into a content service. All of these use cases can in turn help improve quality of service, reduce churn, and create new monetization streams for operators. The US's top subscription VoD service Netflix, for example, has said data-driven insights saves the company about \$1 billion per year.¹

IMPROVING UX AND REDUCING CHURN

The two-way communication between end user and operator has proven itself to be one of the biggest advantages – if not the biggest advantage – of Internet-delivered content services. Operators can gather tons of important and useful data about viewers that can be leveraged in order to create better viewing experiences.

Viewership data, including for example a viewer's watch history, browsing tendencies, devices used to consume content, and even the time of day that content is being watched, offer important insights about viewers. Couple that viewership data with extra information from social networks, such as content tastes, celebrity fandoms, and series super fandoms, which can be collected and organized into a user profile, and suddenly the operator has a pretty good idea of who its viewers are.

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These powerful user profiles can help operators not just meet viewers' expectations, but anticipate and exceed them. As the late Steve Jobs once said, "People don't know what they want until you show them."² Content owners and distributors can leverage user profile data to instill meaningful personalization into the service and deliver relevant content recommendations. Operators can run heuristics operations in order to determine a viewer's tastes and preferences in real time, and use that information to tweak personalized recommendations, make them more powerful, and ultimately, provide a better experience to the viewer. In subscription and ad-supported models, increased user satisfaction and content discovery can help reduce churn in a service, improve the "stickiness" of the service, and keep customers engaged with the content and the service.

User profile data can also be used in ad-supported content service models. User profile data can help ad server engines make more informed decisions about ad placement. Using demographic data around

age, gender, and entertainment preferences, and viewership data like genres and devices, operators can now push very targeted and personalized ads to viewers. For example, a male viewer aged 18-35, watching an entire season of “Star Trek” will be more interested in a consumer electronics commercial than a shampoo commercial.

These insights can also be used to inform original content creation. Content owners and distributors can make more informed decisions about investing in specific types of content that are likely to become “hits” for a service. That will increase brand recognition, drive subscriber growth, and increase the stickiness of the service.



Flexible cloud infrastructure helps to create tailored applications for media customers and to build behind-the-scenes real time analytic tools that can improve end users' viewing experience, reduce churn, and open up new opportunities for monetization.

This is a win-win-win solution: the viewer wins by being offered a more relevant advertisement; the operator wins because the viewer is more likely to be happy with the service (assuming the ad is delivered without interruption), and the advertiser wins by benefitting from better ad placement.

DATA-DRIVEN CONTENT DECISIONS, METADATA EXTRACTION AND ASSET CREATION

Operators can utilize demographic data to make decisions about what types of programming to invest in, what's popular with the users, what's most likely to become a hit with the users. By analyzing viewership data of a content service, operators can better understand what types of content are resonating with viewers, for example, and which niche demographics are being underserved. That information can then be used to drive future decisions around what kind of content to license and what kind of content isn't gaining traction among a user base.

Deep learning and object recognition technologies are now powering next-generation video experiences. These advanced technologies can be used for creating and extracting incredibly detailed metadata around content assets automatically and in a very short period of time. A news broadcaster, for example, can use object recognition and deep learning algorithms to search a content library archive for specific footage; or a sports network can use these metadata technologies for tagging plays done by a specific athlete. Advanced, frame by frame metadata enables more advanced search functions within a content library, and can be used to create and deliver more intelligent feature sets for content services.

Cloud infrastructure also enables quick turn-around in asset creation. Operators can create an entire video channel in a matter of hours. These channels can be tailored to specific events, seasons, or types of programming and derive incremental revenue for the operator. The opportunities here are endless: from genre-specific channels like horror films in October, to sports video services that center on a

specific sport, athlete or coach; to niche channels that focus on long-tail content. Creating ancillary channels can help boost viewer engagement and drive subscriptions or advertising revenue for the operator.

MONITORING NETWORKS AND IMPROVING QUALITY OF EXPERIENCE

Operators can also use data about the underlying mechanisms of content delivery to help improve the end-user's experience. By collecting real time data about video playback from the client app or device, operators can better monitor the network conditions that may impact the viewing experience and react appropriately. Improvements to QoE can boost ad-supported revenue by 25%, and can reduce subscription churn by 10% or more, according to a recent study from Verizon Digital Media Services.³

Streaming video protocols like adaptive bitrate streaming (ABR) are used to tailor the resolution of the video being played back to the viewer's specific network conditions. An operator can deliver a lower-resolution version of the video to the user if there's a lack of bandwidth throughput. And using real-time analytics means that if those network conditions were to improve mid-stream, the

operator can switch to a higher-resolution file when the bandwidth becomes available.

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Operators can also monitor content delivery network (CDN) conditions and react in real time to bouts of congestion. If a particular CDN becomes congested during a playback, operators can quickly re-route the video stream to a less congested network to prevent a buffering event – the kiss of death in the OTT world – and that can drive viewers to abandon the video. By monitoring network conditions and video playback, and operators can ensure they're delivering a broadcast-quality viewing experience and boost view sessions and engagement.

ANALYTICS IN ACTION: MAJOR LEAGUE BASEBALL'S STATCAST

With data and analytics, the sky's the limit. The opportunity to create rich user experiences using real time data analysis can drive myriad innovative use cases for operators. Take Major League Baseball Advanced Media (MLBAM) StatCast application, a player tracking system that aggregates and analyzes data in real time during a baseball game to deliver insights to fans. The MLBAM division teamed up with AWS to create a completely unique application using big data and real-time analytics to help drive engagement among fans.

MLBAM estimates it produces about 7 terabytes of data per game, and a jaw-dropping 17 petabytes of data in a single season.⁴ The application, which requires huge volumes of data analysis in real time, required a cost-effective cloud infrastructure to run on top of that's flexible and scalable enough to meet MLBAM's seasonal demands.



CONCLUSION

Big data applications and advanced analytic algorithms are enabling broadcast and OTT companies to be more agile and customer focused by becoming more data driven. This transformation is enabled by big data, analytics and deep learning, powered by AWS's cost-effective and scalable cloud infrastructure.

Data analytics, coupled with [Amazon EMR](#), can offer content owners and distributors powerful insights into customer bases that inform recommendation engines, content discovery mechanisms and optimized ad placement.

Operators can generate granular metadata from libraries of media assets using deep learning and object recognition or image analysis, with [Amazon Machine Learning](#) and [Amazon Rekognition](#). Deep learning-based image analysis opens up new ways to enhance search, check quality (QC) and programmatically organize millions of images.

Flexible cloud services like [Amazon EC2](#) enable operators to create new monetizable content assets and channels in a matter of hours.

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[Amazon CloudWatch](#) gives operators the tools they need to track and monitor content service delivery and playback in real time, which in turn can improve quality of experience for viewers, increase advertising revenue, and reduce churn.

AWS Batch enables developers, producers, and engineers to easily and efficiently run hundreds of thousands of batch computing jobs on AWS.

Media firms interested in learning more about using AWS's cloud infrastructure and services to power next generation video experiences should contact AWS or visit <https://aws.amazon.com/digital-media>. ●

Sources:

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