



AI-Powered Smart Cataloging for Football Broadcasters

HOW ARTIFICIAL INTELLIGENCE IS TRANSFORMING THE BROADCASTING INDUSTRY

CURRENT STATE OF FOOTBALL BROADCASTING

As modern technology changes the way fans watch and interact with their favorite sports teams, the expectations of TV viewers around the world are on the rise. Football is widely regarded as a bona fide global sport, it shouldn't be surprising to note that more than 3.5 billion viewers watched the recently concluded 2018 FIFA World Cup in Russia.

This upsurge in viewership trends, coupled with the digital revolution, has increased the need to deliver more immersive experiences for fans that unlock latent monetization opportunities. Some football teams and leagues, globally, are already capitalizing on this drift by exploring new ways to improve the viewer experience across OTT and other platforms. **La Liga was the first major European football league to launch its own OTT live streaming service, with the aim to make content quickly and easily accessible.**

More than a third of the world's top soccer clubs and six of the top ten largest leagues and federations now offer premium over-the-top (OTT) streaming services, according to a new research by the Kudelski Group.

While linear broadcasters have the advantage to acquire the most valuable media rights, emerging OTT platforms such as DAZN, Amazon Prime Video and YouTube TV are growing in their respective markets, challenging the status quo. However, most football teams are still struggling to adopt cognitive technologies.

Traditional sports broadcasters require large teams of editing professionals to manually pore over hours of footage and create short-form content packages. As a result, editors end up spending much time just finding relevant content pieces, which they could otherwise have spent in actual editing and generation of creative content. Even so, manually cataloging content at scale is time-consuming and near impossible.

In response to this growing need, sports content owners need to turn to intelligent solutions like artificial intelligence (AI) and machine learning (ML).

AI marks an end to archive woes by turning existing video content into assets. Years of valuable footage, with rich metadata indexing, helps editors and archive managers find content quickly and free them from the usual labyrinth of files that pile up. With consistent content tagging and cataloging, the team can also lookup footage from football classics to create engaging content in real-time.



Sports video is set to have the highest year-on-year growth for digital content revenues, estimated to reach

\$94 billion

and account for

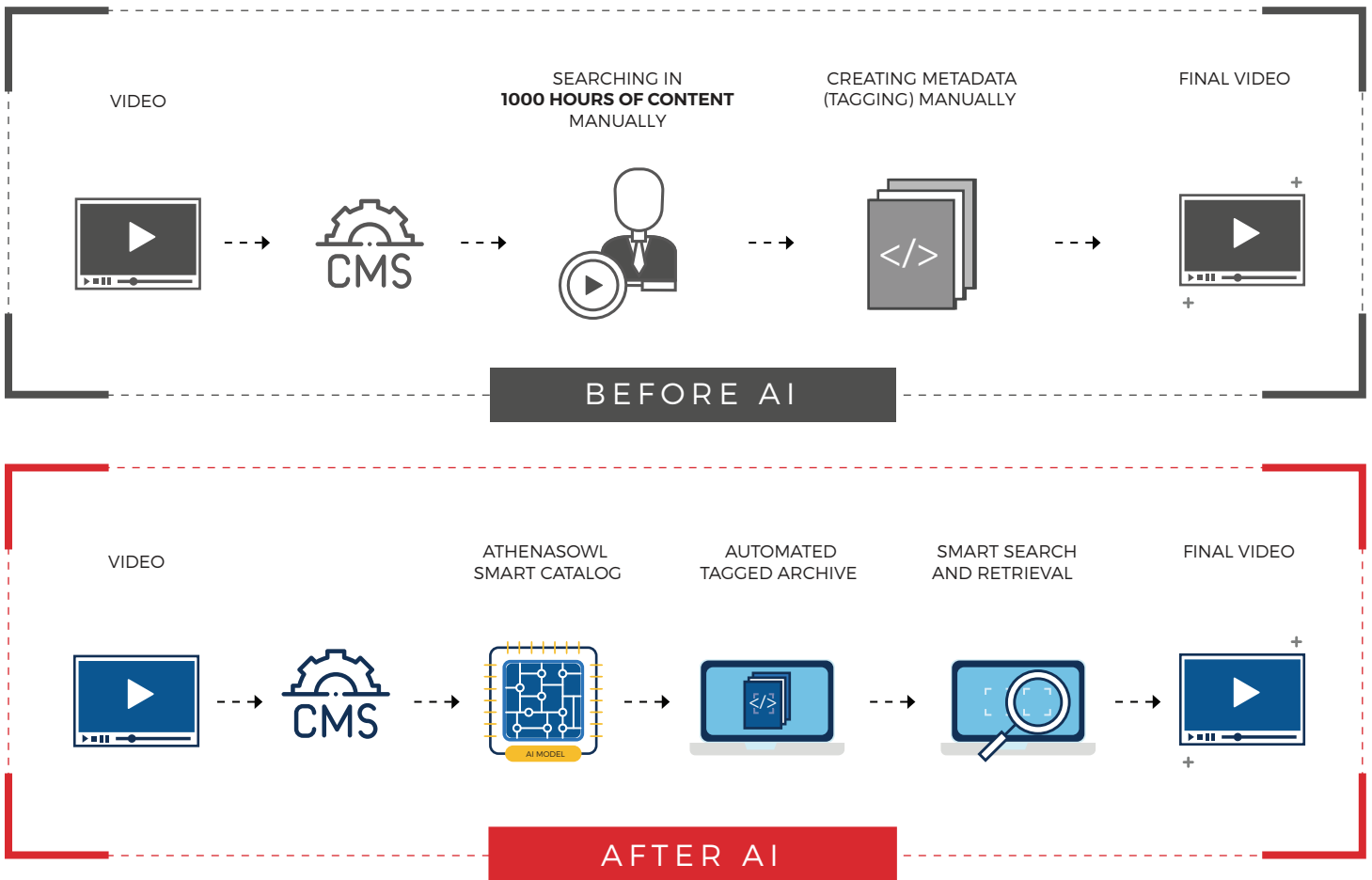
45% of global annual revenue growth.

*Source:
Deloitte Digital Media:
Rise of On-demand Content*

DEMYSTIFYING AI FOR FOOTBALL

Cognitive technologies like AI are a real gamechanger for live sports broadcasting, making a significant impact on the way the audience experiences sports. With next-generation metadata management, AI is all set to transform the way broadcasters monetize sporting events.

With the growing need for video-on-demand, producing relevant content fast enough for impatient football fans gets harder. Inflexible models and cookie-cutter solutions that are pre-trained do not address the growing demands of the football industry. This is where a custom AI solution, designed specifically for football content, can really make a difference.



Solutions like AthenasOwl Smart Catalog, which are powered by custom AI models trained using active learning workflows, allow you to search for specific moments among millions of hours of football content. As you upload videos, the solution reads raw content, creates granular metatags for all moments, analyzes audio and video for accuracy, and delivers curated content. Broadcasters can, therefore, turn video archives into revenue and reduce the total cost of ownership.

THE NEED FOR INTELLIGENT SELF-LEARNING WORKFLOWS

Traditional AI models have two phases

Training Phase

The model “learns” to do a specific task.

Ex. Identifying unique patterns in player faces, objects and locales

Prediction Phase

Using learnings from the “training phase”, the model starts making predictions.

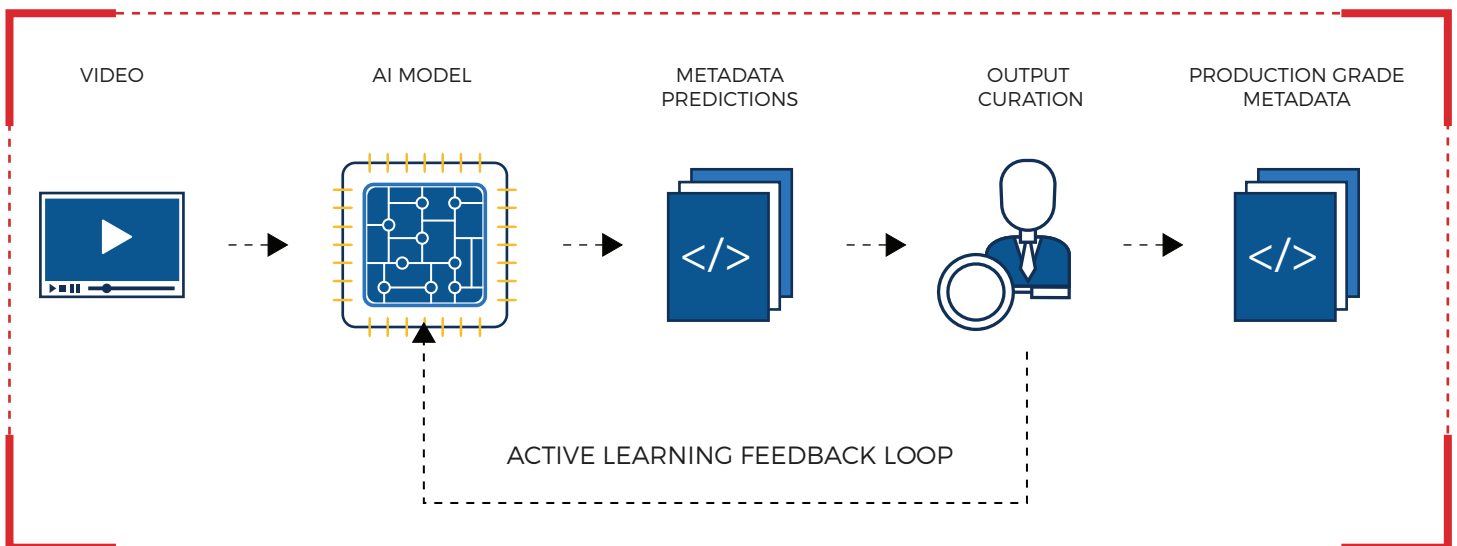
Ex. Classifying an object to a football, recognizing a player like Messi

However, these AI models are “static” i.e., they can only make predictions for the classes on which they were trained. The accuracy of the models is also limited by the amount of training data given to them. For adding any new classes, or to improve accuracy, a completely new model will have to be trained.

To overcome these limitations and challenges, there is a need for self-learning workflows that improve and adapt over time.

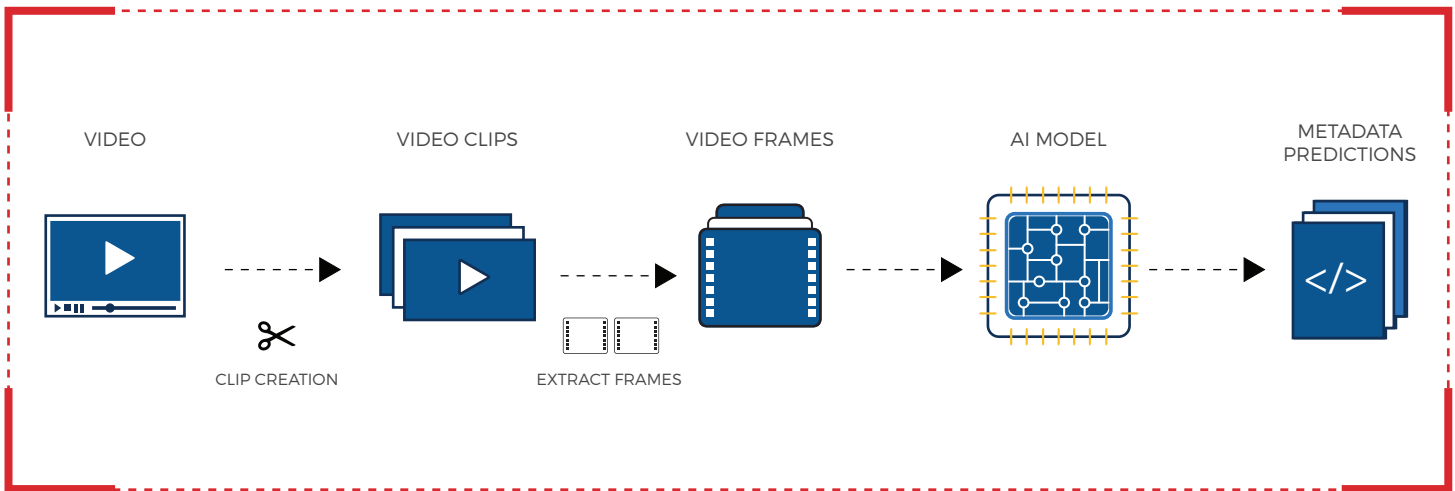
What are active learning workflows?

Active Learning creates a dynamic workflow for models to “learn actively” from the input data that they use to generate predictions.



ATHENASOWL SMART CATALOG : HOW IT WORKS

Active Learning Workflows utilize a feedback loop to provide “corrections” to the model. This works with a level of initial human intervention (man in the loop) where human input is required to correct wrongly predicted tags. This human-reviewed metadata may contain corrections to existing predictions or even addition of new classes. This data is provided to the model via a feedback loop continually over time where the level of human intervention is gradually reduced until the model is capable of generating near-perfect predictions.



AthenasOwl Smart Catalog can transform your media archive by dynamically training a base model to make editing decisions that are currently done manually. The result is a smart library that:

- Enables quick search & delivery of moments within your archive
- Boosts operational efficiency by reducing manual tagging of video content
- Unlocks latent monetization potential with new-age advertising like contextual ad placements
- Remonetizes existing content assets through repackaging

What it does

AI-powered smart content catalogs generate frame-level metadata for visual aspects in content such as:



Football pitch locales (e.g., benches, audience stands)

The AI model takes a single frame as input and classifies the whole image into one of the locale classes. It is trained to identify locales such as crowd, bench, goalpost. This technology is called Image Classification.



Players' faces and emotions

The AI model takes a single frame as input to localize the faces present in an image and identifies facial features such as eyes, nose & eyebrows to uniquely classify a detected face. It also recognizes the patterns of these facial features to detect emotions like happy, sad, angry and more.



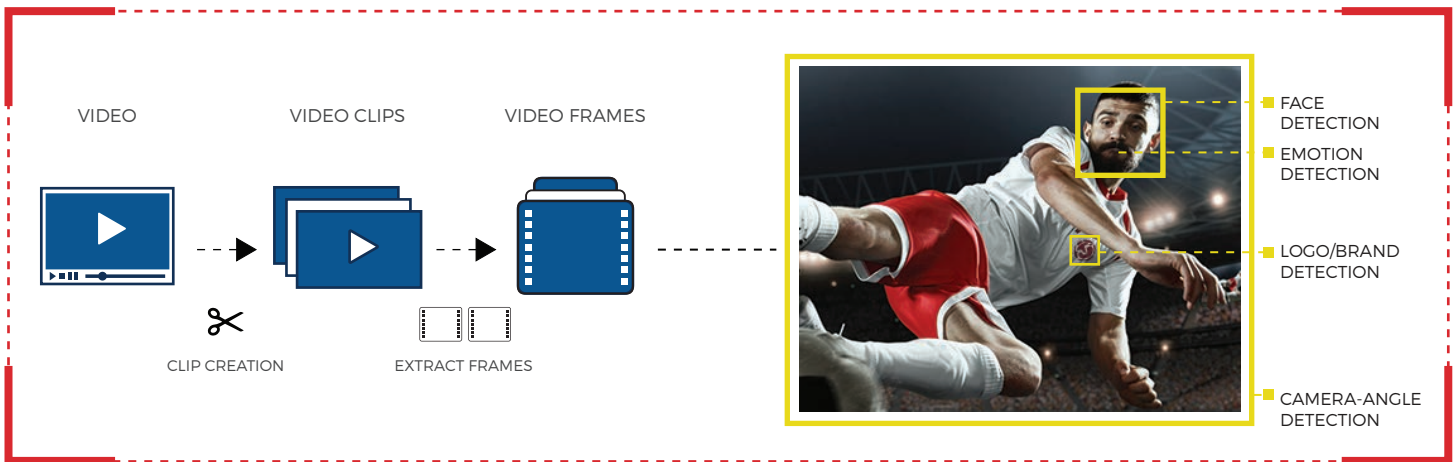
Football club crests/sponsor logos

With a technology called Object Localization, the AI model uses a single frame as input to localize the objects present in an image. The model identifies patterns in the localized objects to classify them into unique classes on which the model is trained on.



Custom camera shot angles (e.g., aesthetics and spectator shots, aerial views)

Using a single frame as input, the AI model classifies a whole image into the respective camera angle classes such as beauty shots, spider cam, and other football-specific angles.



Custom entities (e.g red card, yellow card)

With Object Localization, the AI model can also detect custom entities within a match. For instance, a red card in an outstretched hand is classified as a red card.

THE IMPACT OF AI ON YOUR FOOTBALL MEDIA ARCHIVE

Video tagging processes are heavily manual and time-consuming, which takes a toll on the editors. An AI-powered solution can generate granular meta tags for all the video content, making large unexplored media archives far smarter. Some of the benefits of a smart media archive are:



SMART ARCHIVES: A GAMECHANGER FOR FOOTBALL FAN ENGAGEMENT & BUSINESS ROI

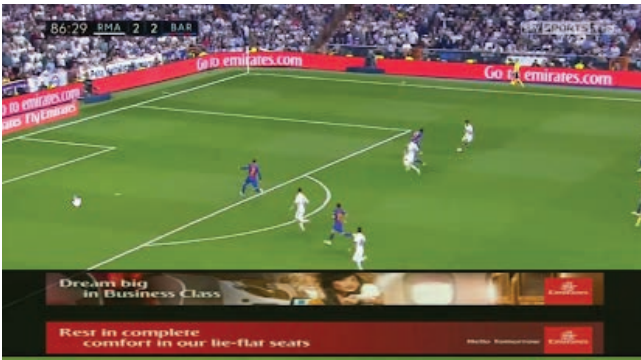
What Can A Smart Archive Help Me Do?

With an AI-powered Smart Archive, there is a massive opportunity for football teams to monetize their assets through fan engagement, identifying new sponsorship opportunities, and tracking brand sponsorships.

1 Repurposing and repackaging content

Content consumption trends show that TV viewers are more interested in watching short clips/highlights than the entire content. Traditional media houses spend a lot of time and manual effort in creating short-form content packages to drive better ROI from existing content. By generating time-coded granular metadata output using AI, content teams gain access to an entire video timeline based on the appearance of celebrities and brand ambassadors, brand logos, content high points, and more. With a smart library, the teams can easily search and retrieve specific moments and then repackage the content in different formats.

2 Contextual ad placement



Placing advertisements in front of the right person at the right time is critical to brand managers. Media companies miss out on latent monetization potential from advertising due to restrictions in the availability of spots based on the duration, number and types of segments of the content.

A smart archive helps in dynamically placing ads virtually based on events in the video content.

3 Brand measurement/Brand tracking

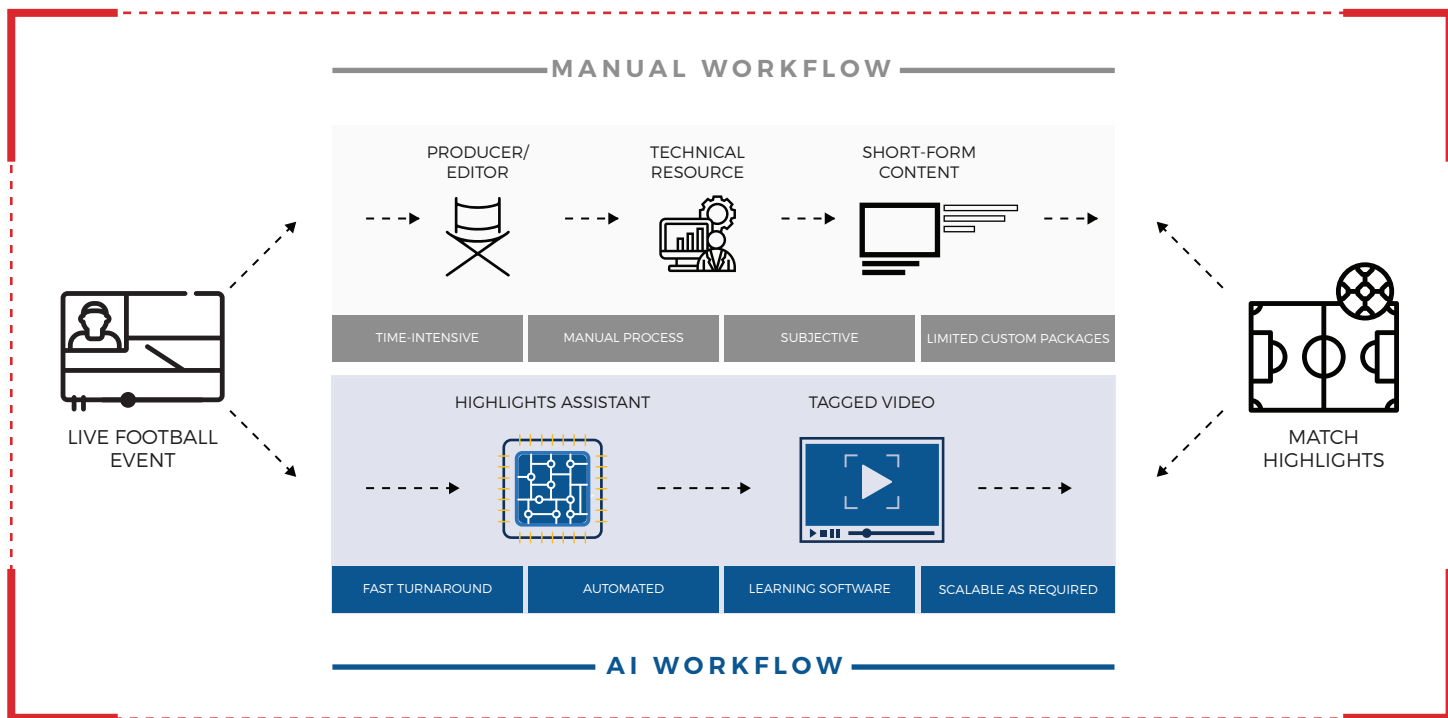
An AI-powered archive enables the model to read raw video content, create metatags for all moments, analyze audio and video for accuracy, and deliver curated content. Intelligent access to micro-moments makes it easy to track and measure the visibility of brand logos throughout the footage. Brand managers can analyze these videos carefully to make smarter decisions around ad placements within the field to optimize their ROI.



4 Auto highlights

Most football fans today prefer watching match highlights—which last for about 5-10 minutes, presenting a narrative that summarizes the game adequately—to the full 90 minutes of football plus stoppage time.

To create these highlights instantly, broadcasters need large teams to manually sift through raw match footage and pull out relevant moments. Given the high volume of footage each broadcaster compiles each matchday, there's a lot of content to process.



With a relatively small number of goals and moments of brilliance being classifiable as highlight-worthy, an AI model can improve team efficiency with reduction in manual effort and time lag, which leaves the entire production team with more time and focus to create high-quality content.

REAL-LIFE APPLICATIONS

We helped the largest German Football League to generate customized granular meta tags for an entire season's content.

Problem

The client had a 50-year-old video archive with 1000s of hours of untagged content which was not searchable at a granular level for repurposing and monetization.

Solution

With custom ID and detailed meta-tagging, the post-production team can track players, the ball, club logos, brand logos, and field locations in live and historical football matches.

Enabled the post-production team to select and leverage multiple perspectives, and choose from numerous camera angles and crowd scenes in minutes.

Benefits

Intelligent access to micro-moments and richer access to intricate details allow better content monetization.

PUT AI TO WORK FOR YOU

There's no better time than now to take charge of your content archive and make it work harder for you—and you'll need a trusted partner to show you the way. Schedule a private demo, and we'll walk you through a customized plan for improving your content archive with AI.

AthenasOwl is a leading provider of artificial intelligence solutions that revolutionizes the way video content is created, managed and distributed. Our deep understanding of the media industry and an approach that combines AI with cloud enables customers to overcome their most complex business challenges and create transformational results.

It's time to empower transformation across your media value chain: [talk to an expert today.](#)

