



The Future of OTT TV: How AI and ML are reshaping Telco Offerings in the EU

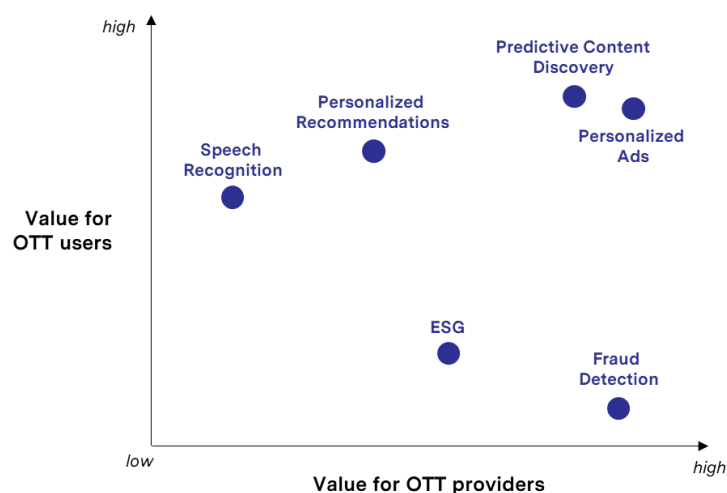
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Introduction and Outline

The Role of AI and ML in OTT TV Products of European Telcos

In the rapidly evolving and highly competitive landscape of streaming and Over-The-Top (OTT) TV services, the integration of artificial intelligence (AI) and machine learning (ML) has emerged as a transformative force. Within the European market, where OTT TV products of Telcos are gaining prominence in a saturated TV and streaming market, the role of AI and ML becomes increasingly important to compete for market shares by redefining the way we consume and engage with content. This whitepaper delves into the intricacies of this digital transformation, shedding light on how AI and ML technologies are reshaping the OTT TV landscape in Europe. At its core, the paper



presents a comprehensive framework that clusters AI and ML trends and use cases based on their value to OTT providers and users. As we navigate through this whitepaper, we will explore six key AI trends and use cases in this field. These use cases span from the transformative power of personalized ads to the pivotal role of AI in enhancing environmental, social, and governance (ESG) considerations within the OTT TV sector. Together, they represent a panoramic view of how technology is propelling Telco OTT TV products into a future of unprecedented personalization, efficiency, and sustainability.

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The Transformative Power of Personalized Ads in the OTT Landscape

What are Personalized Ads? The Changing Role of AI

In the ever-evolving landscape of digital advertising, personalized ads have emerged as a revolutionary force, redefining how content is delivered to viewers and transforming the way advertisers connect with their audiences. At the core of this transformation lies AI, the catalyst for change to shift from generic advertising to targeted, relevant, and engaging campaigns. Personalized ads represent a departure from the traditional one-size-fits-all approach. In the past, with traditional TV, advertising was inherently generic, aimed at broad demographics. AI's ability to analyze vast data sets and derive insights allows for hyper-targeted ad delivery. This shift from mass advertising to personalized content is poised to redefine the advertising landscape.

The Value of Personalized Ads for OTT Users and Providers

Over-The-Top (OTT) platforms have witnessed a monumental shift in advertising dynamics due to personalized ads. The benefits are twofold.

For Users: The viewing experience is enhanced, as they are presented with fewer irrelevant ads. This targeted approach ensures that users are exposed to content that resonates with their interests, making their viewing time more enjoyable and engaging.

For Providers: For OTT providers, personalized ads bring a substantial competitive edge. They result in significantly higher conversion rates, leading to a more favorable cost-benefit ratio for advertisers. Moreover, OTT platform providers benefit in a unique way. In the past, they incurred higher costs for content delivery, as OTT advertising wasn't factored into revenue. However, with targeted ads, precise ad placements, including placeholders, generate revenues from advertisers. The industry is currently grappling with whether this will lead to lower channel costs or if revenue share models will dominate, reshaping the OTT ecosystem.

The Critical Role of Data Privacy

While personalized ads offer incredible benefits, they also raise critical data privacy concerns. In the European Union, a user's opt-in consent is mandatory for personalized content delivery. This underscores the importance of data protection in the realm of personalized ads. AI enhances personalization while also necessitating adherence to data privacy regulations, safeguarding user information, and reinforcing trust.

Methods of Personalized Ad Delivery

The deployment of personalized ads encompasses a variety of innovative methods, each offering distinct advantages. Firstly, addressable TV employs placeholders for ad blocks, enabling tailored ad delivery to specific households. Industry giants ProSiebenSat.1 and RTL Deutschland have embarked on a transformative journey with their joint venture, d-force. This groundbreaking partnership aims to establish an efficient programmatic advertising ecosystem, revolutionizing how ads are delivered. Secondly, FAST-Channels (free-ad-supported streaming TV) seamlessly integrate ads within successive live streams. Lastly, the AVOD (ad-based video-on-demand) method offers free video-on-demand services intertwined with advertisements, often facilitated by AI-driven recommendation engines.

Conclusion: Shaping the Advertising Future with Personalization through AI

In conclusion, personalized ads driven by AI are reshaping the advertising landscape in the OTT realm. AI's role as an analytical powerhouse ensures that content delivery is no longer a shot in the dark but a precision-guided missile. However, it's essential to note that the effectiveness of personalized ads hinges on reaching a critical mass of users. As AI continues to advance, the synergy between personalization and technology, while safeguarding data privacy, paves the way for a future where every ad is a meaningful connection between brands and consumers.

Unlocking the Future of OTT TV with AI-Driven Personalized Recommendations

The Imperative of Personalized Recommendations in OTT TV

In an increasingly crowded OTT TV landscape, personalized recommendations have transitioned from being a nice-to-have feature to an absolute necessity. These are finely tuned suggestions of movies, series, or other types of content, crafted based on intricate analyses of user behavior and preferences. As the OTT TV market is on track for substantial growth through 2030¹, the role of personalized recommendations in enhancing user experience and content discoverability has become indispensable.

¹Source: [Benzinga](#)

The AI Paradigm Shift: A New Era for Personalized Recommendations

AI and ML are revolutionizing the way personalized recommendations are generated. While in the past, recommendations were mainly based on curation from the platform operator or traditional methods often relied on static algorithms, AI introduces dynamic, real-time analytics and predictive modeling into the equation. Generative AI models, although still under research, hold the promise of creating even more adaptive and responsive recommendation systems. These cutting-edge algorithms can sift through a multitude of factors in real-time, from user behavior to similar user profiles, to deliver highly personalized content suggestions. However, AI bias as a potential risk can inadvertently skew recommendations and limit content diversity, thereby affecting the overall user experience.

The Value Equation: A Win-Win for Users and Telco Companies

For Users: Personalized recommendations driven by AI dramatically elevate user engagement by minimizing the time spent on content discovery. Scientific studies underscore that users are prone to disengagement if they don't find compelling content within 60-90 seconds. AI effectively addresses this challenge by swiftly offering accurate and tailored content suggestions, thereby enhancing the overall user experience.

For Providers: For telecommunications companies branching into OTT services, AI-driven recommendations offer a significant competitive advantage. These algorithms not only enhance user retention but also furnish invaluable data insights. These insights can be strategically leveraged for targeted marketing campaigns, content acquisition strategies, and even pricing models.

Case Study: Sky Deutschland, a leading OTT TV service provider in the DACH region, exemplifies the transformative power of AI-driven personalized recommendations. Their sophisticated system employs a blend of content-based and collaborative filtering methods to deliver a highly individualized viewing experience. This has led to measurable outcomes, including increased user engagement, higher average watch times, and a notable reduction in subscriber churn. The success of Sky Deutschland serves as a compelling testament to the immense value that AI-driven personalized recommendations can bring to both users and OTT service providers.



Conclusion: AI as the Foundation for Personalized Recommendations in OTT TV

The advent of AI-driven personalized recommendations heralds a new epoch in OTT TV. As the industry matures, the spotlight will increasingly be on AI models that are not just algorithmically advanced but also capable of learning, adapting, and improving. This promises a more personalized, ethical, and engaging user experience, thereby cementing AI's role as a foundational element in the future of OTT TV.

The Role of Predictive Content Discovery for Long-Term Customer Loyalty on OTT Platforms

The Relevance of Predictive Content Discovery in the OTT TV Landscape

In today's highly competitive OTT TV landscape, characterized by frequent subscriber fluctuation, platform providers need to offer an attractive content library that constantly evolves according to the interests and preferences of their users. Since the purchasing or licensing of external content or even the in-house production of original content is one of the major cost factors in the industry, these decisions are crucial for success and the ability to stay competitive. OTT TV platform providers face the challenge of not only acquiring content that appeals to a diverse and sophisticated audience, but also ensuring that this content remains attractive and exciting over time. As subscriber preferences evolve and users tend to prefer flexible, monthly plans, providers must make informed, forward-thinking content acquisition and creation decisions to attract and retain users. In this dynamic and ever-evolving landscape, content selection and production are therefore not only about meeting current demand, but also about sensing future trends.

AI is Changing the Course of Predictive Content Discovery

AI and ML can have a significant impact, empowering OTT platform providers to make data-driven predictions about what content will resonate most with their audiences. This goes beyond mere recommendations for users; it extends to forecasting what content will perform well in terms of viewership and engagement. AI can help meticulously analyze user data, including viewing patterns, preferences, and even real-time behavior, to predict future content trends.

The Potential Benefits of AI-Driven Predictive Content Discovery

For Users: For users, it translates into a more personalized and satisfying viewing experience. Users are receiving fresh content that is not only aligned with their current preferences, but also takes future trends into consideration. This

keeps users engaged and fosters long-term loyalty.

For Providers: AI enables platform providers to make more informed content purchasing and creation decisions. For example, they can identify emerging genres or themes that are gaining popularity and strategically invest in content that aligns with these trends. This not only minimizes the risk associated with content investments but also maximizes the potential for user engagement and retention.



Conclusion: AI Enables Informed Decision-Making for Future Content

AI-driven predictive content discovery is poised to revolutionize how OTT platforms make content purchasing and creation decisions. By collecting user data and accurately predicting content trends, platforms can optimize their portfolios more cost-efficiently while enhancing the user experience. In a landscape where the costs of content are a significant factor, AI-driven predictive content discovery is set to play a pivotal role in shaping the future decision-making process in the OTT TV landscape.

Offering a Seamless User Experience on OTT Platforms through AI-Powered Speech Recognition Systems

The Changing Role of AI in Speech Recognition Systems

Speech recognition converts spoken language into text or commands, allowing a broad range of devices to understand and respond to human speech. It involves the use of well-trained neurological networks to analyze and interpret audio signals, enabling interaction with devices through spoken words. In recent years, AI, particularly the improvements in ML and natural language processing (NLP) technologies, have significantly enhanced the capabilities of speech recognition systems. Thereby, these systems became more accurate, context-aware, and capable of understanding natural language. They have extended to intelligent voice assistants, real-time speech translation, and voice-controlled devices, fundamentally changing the way we interact with technology and access information. This also has significant implications for the way we use and interact with OTT TV platforms. With the evolution of AI, speech recognition is well on its way to becoming part of all facets of OTT TV platforms. Besides the way users will discover, access and view content, it will also influence the production and analytic capabilities in OTT.

The Value of Speech Recognition for OTT Users and Providers

For Users: Speech recognition enhances the OTT TV user experience by offering a seamless and more intuitive means of accessing content. Users can effortlessly navigate, search for content, and control playback using natural language commands. This eliminates the need for complex remote controls or manual text input, making content discovery and interaction easier and more straightforward. Moreover, speech recognition enables hands-free control, allowing users to multitask and engage with content seamlessly. This also leads to better inclusivity, as voice commands make it easier for individuals with mobility impairments to control and navigate through the OTT platform.

For Providers: The more natural and straightforward navigation through speech fosters increased interaction between users and OTT TV platforms. This opens opportunities to collect and analyze valuable data, leading to a deeper understanding of users and their preferences., facilitating improved decision-making for future content, as well as optimizing personalized recommendations and advertising.

Hurdles for the Implementation of Speech Recognition in the Field of OTT

Speech recognition systems must contend with variations in accents, dialects, and speech patterns. Understanding and accurately transcribing diverse forms of spoken language and grasping context can be challenging. In addition, speech recognition systems must be capable of dealing with other challenging factors such as background noise, the identification of the correct speaker, and the understanding of ambiguous terms or speech commands, which can have a negative impact on accuracy and thus on the overall user experience. Furthermore, the storage and processing of speech data raises concerns about data security and user privacy that must be taken into account.

Conclusion: AI-Driven Speech Recognition is Indispensable for a Seamless OTT User Experience

In today's highly competitive landscape, the implementation of an AI-powered speech recognition system is almost indispensable for any OTT platform provider, as it significantly improves user interaction, accessibility and content discovery. It not only improves the user experience but also enables OTT providers to remain competitive and adapt to the evolving expectations of their audiences. Despite the necessity for OTT providers to incorporate speech recognition, there are still some hurdles to overcome in terms of language coverage and accuracy, as well as data security and privacy concerns.

Fraud in the OTT World - How AI is Changing the Landscape

Cracking Down on OTT TV Fraud: AI's New Frontier

OTT TV, like every other digital platform, is not immune to fraud. One of the most prevalent forms of fraud in this realm is ad fraud. Estimates suggest that an astonishing 20% of ad budgets across all channels are siphoned off by fraudsters, and the OTT TV space is no exception. This insidious problem not only drains precious advertising dollars but also undermines the integrity of the industry. Fortunately, AI is emerging as a powerful tool to detect and prevent OTT fraud, including ad fraud, content fraud, service fraud, and account fraud.

Ad Fraud: A Costly Predicament

Ad fraud is perhaps the most notorious type of fraud plaguing the OTT TV ecosystem. In a typical ad fraud scheme, fraudsters sell ad space and artificially inflate view counts. This is achieved by simulating smart TVs, often coupled with spoofing viewer locations using IP addresses from regions with higher ad rates. These counterfeit views can be generated by single devices continuously looping content or through advanced OTT/CTV device farms, capable of generating vast numbers of artificial impressions.

The Expanding Universe of OTT Fraud

However, fraud in the OTT space extends beyond ad fraud. Content fraud, service fraud, and account fraud are also prevalent. Companies are hemorrhaging millions, for instance, due to account fraud, wherein one account is shared by more users than stipulated in the licensing agreement.

Impact on Users: Fraud can harm OTT users by jeopardizing their security and undermining their trust in the platform, ultimately diminishing their viewing experience and satisfaction. Financial consequences cannot be ruled out either, as revenue losses are often passed on to customers.

Impact on Providers: Fraudulent schemes pose a significant threat to the integrity and reputation of OTT providers as well as to the financial stability of the whole business model. Activities such as account sharing can result in substantial revenue losses, while ad fraud erodes trust from advertisers.

The Role of AI in Fraud Detection and Prevention

The use of AI is pivotal in detecting and preventing fraud in the OTT world. Traditional methods of fraud detection, especially for ad fraud, are using a simple and transparent tech stack as well as only using ad tech vendors that are independently validated. However, the way most prone to success is using more advanced fraud modeling to validate ad and content requests. ML algorithms can analyze vast amounts of data in real-time, identifying patterns and anomalies that would be impossible for humans to detect manually.



Conclusion: AI has the Potential to Significantly Lower the Impact of Fraud in the Field of OTT TV

Fraud poses a significant threat to the OTT TV industry, but AI is a game-changer in the fight against it. By leveraging AI's capabilities in behavioral analysis, pattern recognition, user authentication, and ad verification, OTT platforms can better safeguard their ecosystems, ensuring a fair and secure environment for users, advertisers, and content providers alike. As technology continues to evolve, the battle against OTT fraud will increasingly rely on the intelligence of machines to maintain the integrity of this dynamic digital landscape.

The Environmental Impact of OTT TV and Streaming: How ESG and AI are Shaping the Future

Streaming Sustainability: Unveiling the Environmental Impact of OTT TV

In recent years, the world has witnessed a remarkable surge in the popularity of Over-The-Top (OTT) TV and streaming services. As more people choose to stream their favorite content, the question arises: what impact does this trend have on the environment? Streaming is undoubtedly changing the way we consume media. It offers convenience, choice, and on-demand access to a vast array of content. However, the convenience of streaming comes with a significant energy and environmental footprint. Data centers, content delivery networks, and the devices we use for streaming all contribute to energy consumption and carbon emissions.

Green Streaming Initiatives: A Path to Sustainability

To address concerns about the environmental impact of streaming, companies are actively exploring ways to reduce their carbon footprint. Some key initiatives include:

- **User Engagement:** Encouraging users to be mindful of their streaming habits, such as turning off autoplay and lowering video quality when necessary.
- **Eco-Friendly Hardware:** Developing energy-efficient streaming devices and smart TVs.
- **Data Center Efficiency:** Optimizing data center operations through AI-driven solutions to reduce energy consumption.
- **Content Compression:** Implementing more efficient compression algorithms to reduce data transfer and energy use during streaming.

Benefits of Green Streaming

Transitioning to more environmentally friendly streaming practices offers several advantages for providers and users in the OTT TV space.

For users: Green streaming benefits consumers by reducing their carbon footprint and potentially lowering their energy bills through more energy efficient data processing. As a side effect, this is also leading to an improved experience for users on limited bandwidth.

For providers: It fosters a positive brand image, increasing customer loyalty. Additionally, investing in energy-efficient infrastructure leads to cost savings and ensures compliance with stricter environmental regulations. Furthermore, aligning with ESG principles makes companies more attractive to socially responsible investors, offering funding and growth opportunities.

AI's Role in Green Streaming

AI is a driving force behind the quest for green streaming. One of its most significant impacts is in content compression. AI-powered compression algorithms can optimize video encoding, reducing the amount of data required for streaming while maintaining high-quality visuals. This means that the data rate for streaming is expected to drop significantly in the coming years, resulting in reduced energy consumption and emissions.

Netflix has already made significant strides in this direction. They use AI algorithms to encode videos more efficiently, resulting in a 20% reduction in data usage without compromising quality.

The streaming industry is undergoing a transformation driven by ESG principles and AI innovations. Green streaming initiatives are reducing the environmental impact of OTT TV and streaming, benefiting both the planet and the companies involved. As AI continues to enhance compression algorithms and optimize energy use, the future of streaming looks more environmentally friendly, ensuring a sustainable and enjoyable viewing experience for all.

Conclusion

This whitepaper has explored a range of pivotal AI use cases within the realm of OTT TV products offered by European telcos. From personalized ads to AI-driven recommendations, predictive content discovery, fraud prevention, and the intersection of ESG principles with AI, these insights collectively underscore the transformative potential of AI and ML in shaping the future of OTT television. Not only do these diverse applications enhance the viewer experience, but they also demonstrate the adaptability of AI and its capacity to address both industry challenges and environmental considerations. As the OTT landscape continues to evolve, the integration of AI and ML technologies will undoubtedly play a central role in driving innovation, customer engagement, and sustainability in this dynamic sector.

The challenge for telcos is to assess the value of the presented AI use cases, as well as future use cases that may come up, and align them with the generic OTT Strategy Framework for Telcos shown below. The decision on which use cases to prioritize depends on each company's unique circumstances, such as strategy, goals, capabilities, and market conditions.

mm1 – Your AI Sparring Partner

mm1 is ready to provide expert assistance throughout this crucial process. We help you to evaluate and integrate AI use cases into your strategic agenda, ensuring they match your specific needs. Feel free to reach out for discussions and practical guidance. Together, we can make AI work for your success in this ever-evolving industry.



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