

How to Elevate Your

OTT

Through Predictive
Personalization

Introduction

Differentiate Your Offering

In the highly competitive market of the OTT industry — where the big players like Netflix, Amazon Prime, and Spotify are leading the race with a wide variety of content and immersive UI/UX experiences — setting oneself apart from other players requires an effort to understand the audience and truly cater to their needs and preferences.

The success of any OTT platform depends on these key factors: content, discovery, user interface, and user experience. Personalization — the ability to understand the audience and serve them relevant content — targets all these factors. While the benefits of personalization to viewers are obvious (e.g., curated content, ease of content discovery, greater entertainment value), personalization can also help OTT brands address marketing challenges related to:

- High customer churn
- Targeting the relevant customer
- Content discovery
- Omnichannel viewing
- Showcasing quality and relevant content
- The high cost of customer acquisition
- Increasing average user content consumption
- Converting freemium users to paid subscribers
- Competitive marketplace



Strategy

The 5 “R’s” of Personalization

When developing a personalization solution for OTT, consider first how you want to personalize your platform. Personalization can be **explicit** (using direct user inputs) or **implicit** (drawing on inferences created by the data).

You can use viewer profile data to target your customers with personalized content that has specific impact on those viewers’ decisions or behavior.

Alternatively, you can **recommend** content based on filtering, ranking, and prioritization. In this case of content recommendation, filtering can operate on the basis of popularity, or it can be semantic (based on viewers’ previous online behavior) or collaborative (based on the preferences of segmented audiences to which users belong).

The goal of any successful OTT service is to achieve the “5 R’s” of personalization.



RECOGNIZE

Know your customer and prospect’s profiles, including demographics, geography and expressed or shared interests



REMEMBER

Know your customer’s history meaning actions, expression of browse, play and buy



RECOMMEND

Reach them with the right marketing, offer , content or product recommendations based on their action , preferences and interests



RELEVANCE

Deliver personalization within the context of the digital experience based on who they are, where they are location & what time of the year it is



REINFORCE

Including the feedback of action on deliver personalization back in recommendation system

Technology

AI/ML: the Future of OTT Personalization

The OTT industry is investing largely in Artificial Intelligence / Machine learning (AI/ML) to grab the 30 crucial seconds of attention from the targeted customer. In order to get future-ready, OTT giants like Netflix, Amazon Prime, and Hulu have realized changing consumer interests, viewing habits, viewing patterns, preferences of genre, and so forth are key factors for success. They are ready to invest in Artificial Intelligence and the data for it.

AI/ML personalization utilizes algorithms and predictive analytics to dynamically present the most relevant content or experience for each and every visitor. It provides a more scalable way to achieve unique experiences for individuals, rather than segments of people. It allows you to utilize algorithms to deliver these one-to-one experiences, typically in the form of recommendations for products or content. That said, a next-generation platform can apply AI/ML personalization to recommended categories, brands, offers, and more.

Example Use Cases

In simple terms, AI/ML personalization can be defined as delivering the right content, to the right user, at the right time, and across all the touch points. Below are some examples of how AI/ML personalization can be used in the OTT market.

- **Customer Sentiment Analysis:** Customer sentiment analysis not only helps discover positive and negative inferences from customer behavior but also provides more concrete information for better personalized recommendations.
 - **Personalized Recommendations:** Analyzes disparate data and enables the consumer to make personalized content choices while the business predicts behavior.
 - **Customer Segmentation:** Transforms the customer data into actionable user segments and generates targeted personalized plans and subscribers
 - **Personalized Email and SMS:** Drives more results through personalized email and SMS
 - **Media Metadata Tagging:** Automates the creation of a rich metadata index (object, scene, activity, faces, etc.) extracted from audiovisual content and integrated into digital and media asset management systems
 - **Automated Compliance Marking:** Detects potentially inappropriate content to avoid compliance issues in global markets and to increase brand safety for advertisers
- **Personalized Marketing Campaign:** Personalized offers and messages tailored according to the behavioral insights and personal data gained from real time user interaction for contextual campaigns.

Example User Journey

The below workflow demonstrates how OTT businesses can use ML and predictive analytics to apply personalization across the user journey.



- Content plays key role in personalization by uncovering customer's interest
- Bbig data technology like Spark and Splunk (AWS pipeline) can easily ingest data into system
- Data can be of different format and from different data sources
- Can be real-time or bulk schedule process

- Segmentation of customers based on demographic, lifestyle, behavior, preferences, duration, device, content
- Clustering of customers based on past historical campaign/promotion responsiveness data, including campaign/offer details and mode of communication
- Customer affinities analysis determines patterns and behaviors of customers to identify trending content and interests

- Understanding/knowing customer segments and targeting customers with personalized offers/promotions as per their segments
- Predicting the right mode of communication for customers for new promotions/offers, which will maximize responsiveness of customers
- Determining the right subscription model/ pricing model for packages/plans offered to customers as per their preferences, lifestyle, and viewing habits

- Targeting customers to provide the customized recommendations and advertisements at all touch points to increase the horizon of OTT solutions
- Touchpoints can be email, SMS, recommendations, advertisements, and apps across a various set of devices while maintaining universal user behavior

Implementation

Methods for Prediction and Personalization

In this section, we will introduce different techniques in AI/ML that can help with personalization .

Matrix Factorization (MF) & Markov Chains

Conventional recommender systems often discard sequential information and focus on mining the static relevancy between users and items from interactions. For instance, a conventional recommender system based on matrix factorization may be effective at modeling a user's general preferences by learning from their entire interaction history, but it does not model the order of the user's interactions. One of the most popular approaches uses both matrix factorization (MF) and Markov chains (MC)

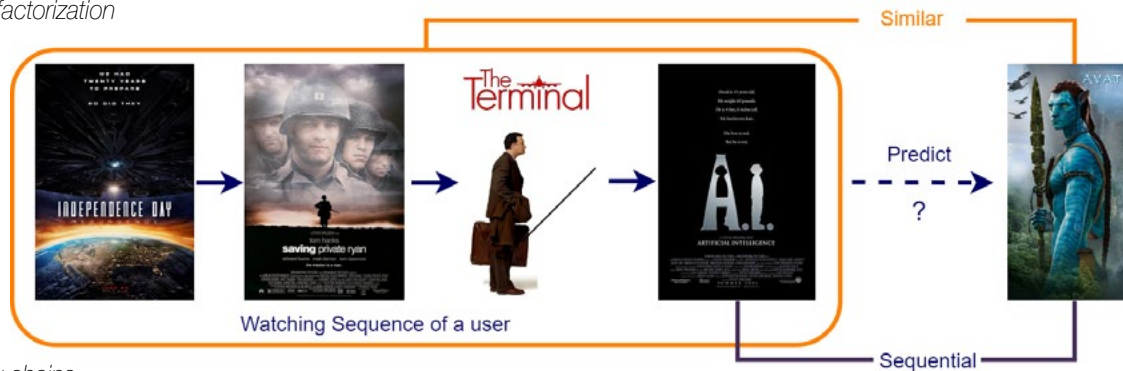
Matrix factorization methods learn the general taste of a user by factoring the matrix over observed user-item preferences.



Matrix factorization

On the other hand, Markov chains methods model sequential behavior by learning a transition graph over items that is used to predict the next action based on the recent actions of a user.

Popular modeling choices for session-based recommender systems include Markov chains with matrix factorization to achieve good recommendation performance. Unlike conventional recommender systems, session-based recommender systems model the evolution of a user's short-term preference implied by sequential interactions in a session with the aim of recommending the next item a user may be interested in.



Markov chains

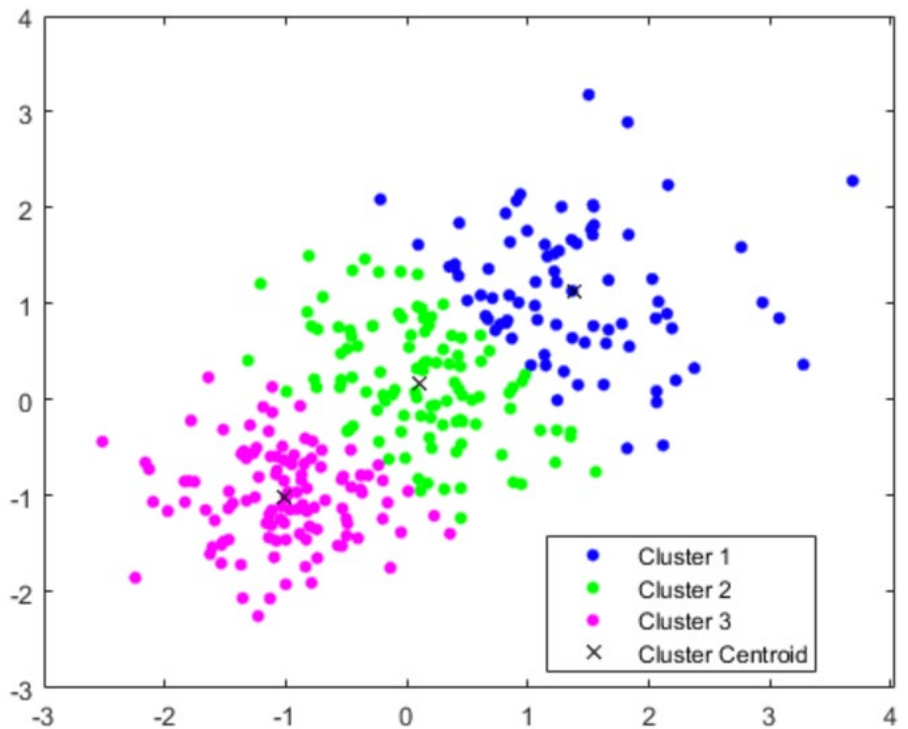


Clustering Algorithms

Clustering algorithms are unsupervised ML algorithms used to analyze unlabeled data, segregate it into groups with similar traits, and assign into clusters.

Among the most popular ones is the k-means algorithm. It starts with estimating the centroids for clusters, the number (k) of which you define in advance. The second step assigns data sets to the nearest centroid based on the Euclidean distance. After that, the centroids for all clusters are recomputed.

This ML method can be used for Video & Audio classification (based on tags, topics, etc.), customer segmentation (based on their purchasing/watch history, app behavior, etc.) and recommendation engine development, social media analysis, anomaly detection, and more.





Regression Analysis

Regression analysis is a supervised ML algorithm for defining relationships between independent (predictor) variables and the dependent (target) variable. Regression (linear) aims at finding a straight line which can accurately depict the actual relationship between two or more variables. The most popular Regression techniques are linear and logistic modelling techniques. It can be used for

- Predictive Analytics - forecasts future opportunities and risks in OTT business. Demand analysis, for instance, predicts the number of items a consumer will probably purchase and watch, etc. Forecasting helps improve productivity, reduce cost, and improve operation.
- New Insights - finds a relationship between different variables by uncovering previously unnoticed patterns. For example, analysis of data from point of sales systems and purchase accounts may highlight market patterns including increased demand on certain days of the week or at certain times of the year.
- Optimize Marketing campaigns - With the help of determining customer behavior, predictive modeling creates and retains profitable users from the marketplace.
- Association rule mining finds interesting associations and relationships among large sets of data items. This rule shows how frequently an item set (movie) occurs in a transaction. A typical example is Market Based Analysis.

OTT providers like Amazon and Netflix mine millions of user's data to see which movies or series are watched together with other movies. This mining reveals patterns of associations or rules; this information is called knowledge. The provider builds knowledge every day by mining its user's data. The provider is able to make accurate predictions and recommendations to its users based on that knowledge.



Conclusion

Improve Conversion, Engagement, Retention

While the opportunity that OTT represents is extraordinary, it is also an increasingly crowded marketplace with the market leaders providing endless options to customers for OTT.

Viewers should be able to find content quickly before they become disengaged and seek other options. Churn rates for OTT are very high, so surfing for the right content options from the content library is of paramount importance to prevent the consumer from needing to move away from the home screen.

Predictive personalization makes this possible, and that results in better conversion, engagement, and retention. Using machine learning algorithms for personalization helps stakeholders to forecast future trends as well as empowers them to make data driven decisions.

Questions? Request a free, no-committment advisory session with one of GlobalLogic's OTT technologists at www.globallogic.com/ott-advisory

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