Customer Churn Prediction in Subscription-Based OTT Platforms Using Machine Learning Techniques

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ABSTRACT

The fast growth within the Top media environment has changed the game regarding the consumption habits of audiences for entertainment content. With various global and regional platforms competing for customers' attention, subscriber retention has become an important business idea of the subscription economy. Churn is defined as the extent to which customers stop using the service, and it has a major impact on profitability and brand equity. This study examines the applicability of Machine Learning algorithms to predict churn probability of subscribers to an OTT brand, with the intention of generating actionable marketing. In this study, Logistic Regression, Random Forest, and XGBoost were applied in a retrospective look at the data with regard to subscriber behavioural and transactional attributes. The models were evaluated based on the following metrics: accuracy, precision, recall, F1-score, and ROC-AUC, which accounted for predictive power to be balanced with business viability. The findings indicate that the ensemble models, both Random Forest and XGBoost, were remarkably better than conventional linear models, with an overall accuracy of 92.9% and an AUC score of 0.88. Key predictors were weekly minutes viewed, inactivity by customer, and support call frequency. This research will help to close the loop between machine learning researchers and marketers by showing a practical application of predictive analytics to enable the prediction of churn and encourage OTT platforms to proactively develop personalized retention efforts to drive customer lifetime value and long-term profitability.

Keywords: Customer Churn, OTT Platforms, Machine Learning, Predictive Analytics, Customer Retention, Digital Marketing

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