84% high spender churn detection

without modeling

Churn prediction of high spenders is a key focus area for any online business. The two key tradeoffs here are timing – how early can churn be identified, and the accuracy of these predictions. The current landscape is inclined towards utilizing machine learning and statistical approaches that require highly trained data scientists who are both expensive and in short supply. Additionally, the accuracy of these approaches is also limited for high spenders who churn out over a period of time rather than due to a specific trigger.

In an online gaming business, like most businesses, a relatively small number of players generate a majority of the revenues. Business managers spend a disproportionate amount of time and effort in keeping these players engaged and spending. Since even a small reduction in their attrition can have an oversized impact, these high spenders are lured with the best promotions and service the business can offer. Without proper targeting, the expense incurred on these promotions usually ends up exceeding the incremental benefit of reduced churn. Timing is also critical – wait too long and reaching the player becomes difficult, wait too little and end up incurring unnecessary promotional expenses on players who were just taking a small break. Therefore, modern gaming businesses usually build elaborate churn prediction models and employ teams of data scientists to identify specific behavioral triggers that could predict attrition. These approaches tend to have low accuracy for high spenders, since churn is usually a gradual, complicated decision for highly engaged players rather than triggered by a specific event.

Now imagine a scenario in which operations resources can identify which high spenders are disengaging from the platform, potentially for good. In this scenario, they are able to do so when these players are still active and can be communicated to on the platform itself, ensuring a high reach. Imagine that they can do this without needing any computationally intensive behavioral models or assistance from data scientists. Imagine that they can make this identification with greater than 80% accuracy. This is exactly what can be done with our innovative motif discovery approach. It is easy to use as it works similarly to Google search. Instead of searching for words, operations executives can search for patterns of engagement that are highly correlated with attrition or reduced share of wallet in the short-to-medium term. They can monitor, modify and find variants of these patterns, thus enriching the knowledge of the motives leading to churn. Businesses

benefit since they can get a substantial increase in the RoI on their retention campaigns.

To validate any approach, the best way is to look at past instances of high spender churn and compare the accuracy of each approach in predicting these instances at some predetermined time interval before they actually happen. The higher the precision of the prediction, the higher is the RoI on the spend. Play Games24x7 (owner of RummyCircle) presented us with the live data of over 1,000,000 players out of which a small percentage churned out over time. This dataset was used to identify behavioural patterns which predict attrition at a time when the churned player is still active, and identify the causes of these. To implement our approach, we first selected players who churned in one time period and isolated their activity patterns right before the period they became inactive. We grouped these patterns and looked for similar patterns in other time periods and found that we could flag churn or reduced spend with 84% precision. Our results were much superior to Machine Learning based predictive approaches where the observed precision was under 50%.

Our approach is guided by a principle to democratize data by empowering the operations executives to identifying and validating different pre-attrition patterns. They can even utilize their domain knowledge and provide observed patterns instead of discovering suspect patterns from data. The business can save even more time and money by linking our platform to their marketing automation systems, so that flagged high spenders can be targeted automatically.