

Can we understand how demographics, product usage, revenue and product movements affect customers upsell journey?

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Project Background

Upselling and cross-selling are two techniques that every organisation uses in order to ensure sales increase year-on-year. In today's world it is almost impossible not to be upsold or cross-sold items in-store or when we purchase online. Cross-selling and upselling are time-tested methods which marketers use time and again to attract customers. Upselling is a method whereby the company sells you more volume of the existing product or makes you upgrade to a higher-priced version of the product; whilst cross-selling is a method where items are sold to the customer that may or may not be related to the currently purchased item. Both cross-selling and upselling are often more fruitful when they are performed inbound rather than outbound. For instance, when a customer contacts the brand with an issue and it is resolved, the customer is more likely to be cross-sold/upsold. Additionally, the brand does not have to spend money to target their customers since the customer made the initial contact.

Data and Methods

The data set for this research consisted of six data files: Customer Information, Broadband Usage, Television Usage, Discounts Applied, Product Changes, Revenue Collected. The data was collected for 70,852 unique customers between 30/04/2018 and 30/04/2019. The dataset was anonymised where each customer is assigned a customer ID. Since the data was highly imbalanced for customer broadband and television up spin, Synthetic Minority Oversampling Technique (SMOTE) was used to handle the class imbalance. In order to model the broadband and television up spin opportunities a Random Forest approach was used to predict up spin opportunities.

Key Findings

In Figure 1, the Random Forest approach to predict the broadband up spin (AUC=0.97) indicates the top three most important factors are: the type of house the customer lives in, the total amount paid by the customer and the volume of broadband used (GBs) during late peak hours i.e. from 22:00 to 23:00.

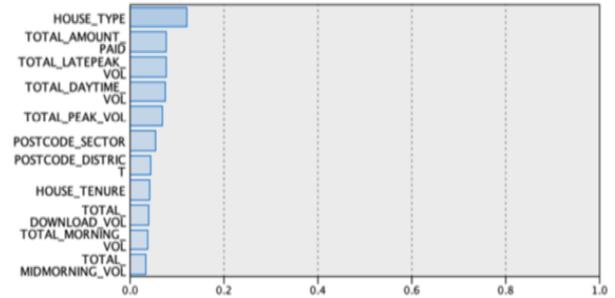


Figure 1. Predictor Importance for Broadband Up Spin

In Figure 2, the top three most important factors that influence a television up spin (AUC=0.98) are: the number of minutes a customer spends watching a linked recorded series followed by the number of days the YouTube App has been used and the total number of channels the customer has watched.

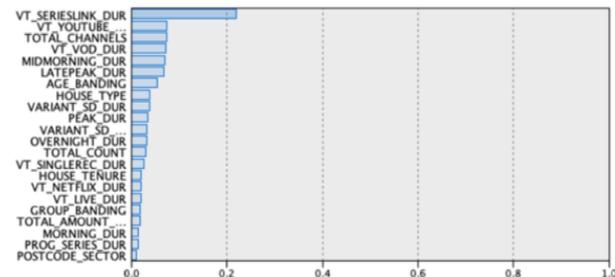


Figure 2. Predictor Importance for Television Up Spin

Value of the Research

The results from this research helps us to understand what factors influence an upselling opportunity for broadband and television. Moreover, these findings can be employed as a preliminary metric to understand customer upsell and cross-sell across the telecommunication industry.