Customer Lifetime Value

Abhishek Chaturvedi

June 8, 2017

You work as an analyst for *Spotifoo*, an online music streaming service. Spotifoo charges its customers a low fixed rate to stream music online. In addition to a monthly subscription fee, *Spotifoo* allows its customers to purchase products and services mentioned using the *Spotifoo* app. Some customers make no additional purchase besides the monthly subscriptions fee. Other make regular purchases.

Management wants to:

1. understand who their best customers are.
2. create a customer lifetime value (CLV) model that predict the lifetime value of each customer after their first month on the *Spotifoo* service.

The data assets are available to you are: - user attributes (demographics, locations, customer survey responses, etc.) - purchase history (items purchases, date/time of purchase, purchase amount, etc.) and, - product attributes (product, product type, etc.)

For each management question, describe your process. In particular, describe: - the response you would use for your model, - what predictors you would use, - what errors you will use, - how you get a training and test data set, - the modeling techniques you would use

Response for the model

Two models are required one to predict the customer classification and second one to predict the lifetime

Customer classification model

For this model the input needed from the business stakeholders is how they want to classify their customers and how many categories they need. e.g. 4 categories

- Most Valued : Customers who paid sign up fee and subscribed to monthly subscription for more than 3 years or purchased 15 products within 1 year of sign up
- Valued : Customers who paid sign up fee and subscribed to monthly subscription for more than a year or purchased 5 products within 1 year of sign up
- Average : Customers who paid sign up fee and subscribed to monthly subscription for less than a year
- Below Average : Customer who only paid the sign up fee

Above sample requirements will need data in a flat structure (sample predictors given below)

User Data :

- Age
- Gender
- Month of signup
- Year of signup
- State
- Zip code
- Marital status
- Number of reviews posted
- Total number of products bought
- Total number of months of subscription

- Service Ended or not
- Genres liked
- Artists liked

Songs/Products Data :

- Number of products avaialble to sell
- Number of Artists for which songs are avaialble
- Number of Songs available
- Number of playlists

Use the existing customer data to identify the classifications they belong to based on rules provided by business

Use bootstrap mechanism to generate training and test data out of the data

use random forrest to generate the model to classify customers

Customer lifetime value model

Business stakeholders need to defined lifetime segments they are interested in

- Period for which 75% of the customers will remain customers
- Period for which 50% of the customers will remain customers
- Period for which 25% of the customers will remain customers

The next question for them would be

1. Do they want to identify the customer on the day of signup his possibility of engagement to customize offers for him ?
2. Do they want to identify the possibility of future engagement based on the user's current engagement to customize offers for him ?

We can use all predictors avaialble including total number of months of subscription to identify the future predictions

use ARIMA model with preidctors as well as months of spscriptions as y to predict CLV