Predicting Customer Attrition

As a frequent consumer of podcasts, I find myself hearing the same copy over and over again. None, however, have made a permanent imprint in my long term memory like that of Blue Apron.

“For less than $10 per serving, Blue Apron…”

Because of how much they spent on advertising, I had made the passing assumption that Blue Apron was growing exponentially. Their stock price, however, has conveyed a different story. After IPOing at $10, one share is listed at $2.03 at the time of writing. A quick search surfaces the issue: attrition.

“It's been clear since Blue Apron's IPO that the company has a problem keeping subscribers from cancelling. A refusal to focus on improving retention before ramping up customer acquisition efforts is a recipe for poor marketing efficiency,” writes Adam Levy of the Motley Fool.

An inherent truth of business is that the acquisition of a new customer is significantly more expensive than the retention of an existing customers. In the case of Blue Apron, the company spent “more than $400 to recruit each new customer, despite making only $236 a customer a quarter.”

The reason the lifetime value of a Blue Apron customer is so low? It is because “72% of customers will churn by the time they are six months old’

What if Blue Apron were to take the data they had on each consumer and create a model that could determine each customer’s propensity to leave? Not only would they know exactly what factors contribute to attrition, but more importantly, they would have the insights to tweak those levers to hopefully yield a higher lifetime value per customer.

Using telecom data from IBM, I’ll walk through how this model can be built using Logistic Regression Models and how we can use it to drive business initiatives.

You can find the dataset I’ll be using here: <https://www.kaggle.com/blastchar/telco-customer-churn>

The first thing I like to do is explore the dataset a little bit using Seaborn.

<https://www.fool.com/investing/2018/08/15/blue-apron-still-wont-admit-it-has-a-retention-pro.aspx>

<https://twitter.com/KristenScholer/status/894561807062487040>

<https://www.businessinsider.com/blue-apron-spends-big-for-new-customers-low-return-2017-8>

<https://www.linkedin.com/pulse/detailed-look-blue-aprons-challenging-unit-economics-daniel-mccarthy/>

Interesting Case Study of Predictive Churn Modeling with H20: <https://www.h2o.ai/wp-content/uploads/2017/03/Case-Studies_PayPal.pdf>