**Predict Probability of Sales on Inbound Call Center Traffic**

I work at dgs which is a provider of outsourced online customer acquisition solutions principally to large, consumer-facing organizations and to clients offering products or services to business users. Dgs drives roughly half a million calls per month to its call centers from a variety of different sources such as paid website traffic, paid click to call campaigns on search engines, search engine marketing (SEO) campaigns and third party affiliates.

Dgs' main driver of demand is paid search advertisement on popular search engines such as Google, Yahoo and Bing using click to call campaigns on mobile devices. The competitive landscape has changed over the past few years as more and more dgs like companies have entered this space, making it harder for dgs to drive demand at historical cost levels on these search engines. The costs are being driven up by the increasing paid search marketing spend. It is vital for dgs to make the most out of the calls it drives at a higher price to stay competitive requiring it to accurately predict the high conversion rate calls volume from low conversion call volume and optimize ad spend to stay competitive.

This project aims at predicting the sale on a call based on a number of factors that could range from caller’s demographic, socio-economic data, location and the source of traffic (paid, SEO or affiliate). These factors would be identified using statistical data analysis techniques learned in the course applied on dgs’ calls data 12 months calls data. The factors which contribute the most in predicting could vary based on time of day, callers The analysis will revolve around identifying key metrics that contribute to the prediction of a call as a sale vs non-sale.

I plan on using Bayesian approach to classifying calls using the calls data for 12 months and determine factors that can help predict the outcome. The outcome of the project is a predictive model based on Bayesian approach to help optimize the ad spend by predicting the factors that help in conversion and use this knowledge to improve ROI on ad spend.