



# Arresting Churn through Machine Learning for Digital business

## Business:

Data Analytics

## Domain:

Digital Classified

## Tools:

MySQL, R, R Shiny, etc.

## Key Highlights

### Key Success:

- » The model identified customers that exhibited a high risk of churn.
- » Within 6 months, the client was able to reduce Churn by 10%.

### Algorithms: (implemented in R)

- » Decision Trees
- » CART
- » Random Forests

## Client

The client is a leader in the \$200B local services market in India and for NRIs in USA, Canada, UK, and UAE.

## Overview

The client runs a Lead Generation service in the Local Services space and faced a high churn rate of 60% amongst its Small and Medium Businesses (SMB) customer base. With the intention of arresting churn to a more acceptable rate, Indium Software was commissioned to leverage past transaction data and customer data to ascertain: the reasons for churning, characteristics of churners, phase in the buying cycle of churners, factors that could arrest churn etc.

# 1 Status Quo

The client is a leader in the \$200B local services market in India and for NRIs in USA, Canada, UK, and UAE. The client's platform helps users to minimize the time in finding the right local service provider, to reduce the cost of the service and to minimize the hassle of dealing with service providers. It has a staggering user base of 25 million with 5 million businesses servicing them each month across different local service categories and wide spread geographies.

# 2 Business Requirements

The client runs a Lead Generation service in the local services space and faced a high churn amongst its Small and Medium Businesses (SMB) customer base.

The only touch point the client had with its SMBs were through a business app. However, a large portion of the customers had not yet begun engaging with the app then.

This led to a problem of around 60% customers churning out of the system. They wanted to arrest the churn by knowing the characteristics of these churners.

# 3 Solution

» The customers when they engage with the client would provide their business details. In addition, when they get leads from the client, there are many transactions related data that are auto-generated. A few instances of interesting data points are the number of leads in a month, the interval between the leads, the number of leads serviced.

» Data preparation from the raw customer data posed a key challenge to create Machine Learning model. The sales team was aggressive on their pitch and would extend business subscriptions, over writing their existing subscription details. In this case, the customer data would lack uniqueness, making it difficult to profile a merchant in a given duration.

» Indium Software structured these business details and transaction data, engineered multiple aggregates from the raw data and was able to create a rich profile for the merchants. This data preparation work provided a solid foundation to create machine learning models.

» We applied a range of classification ML algorithms such as Decision Trees, CART, Random Forest on the prepared data, and were able to classify customers and rank them based on their propensity to churn. The use of Random Forest eliminated the bias in training the ML model; data results would have been skewed towards customers who have churned (90% churn results vs 10% retained customers).

» The ML algorithms we chose also helped in identifying factors that influenced this behaviour such as Lead deliveries, Paid Amount, Time elapsed etc.



### 3 Business Impact

- » Insight: We were able to successfully identify Cohorts of customers that were at high risk of churn. The model showed that the likelihood for a customer churning was the highest during his first 6 months of service.
- » Action: The client then put in place, a Customer Happiness Team that would immediately follow up with these Cohorts that our model had deemed "Risky".
- » Result: Within 6 months, the client was able to reduce Churn by 10%, which resulted in a huge increase in revenues as the Average Lifetime value per customer grew due to an increase in contract renewals.



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