Case Study: L101 -Fiber bits

Predictive Modeling Case Study

Customer retention strategy building using Predictive modeling

Business Objective:

"Fiber Bits" is an internet service provider company. They are in the market from last 10 years. They lost almost 42% of their customers in last 3 years. Some new customers joined during the same time period. But, the company is concerned about the high attrition rate in the customer base. They want to get an idea on what are the main factors that lead to customer attrition. To reduce the attrition rate, they have introduced vouchers and other benefits program. The objective is to identify the customers who are most likely to quit in next 2 years and try to retain them by offering free vouchers and benefits.

Problem Statement and Scope of Model

The company has collected around 10000 customer historical data from last three years. We need to build a model that identifies the customers who are most likely to leave. We need to quantify the chance of attrition for each of the customer. The model will be used on the active customers. The free vouchers and benefits will be given to customers with higher probability to attrite in next three years. For example below are two customers, who is most likely to leave. Which customer should we try to retain by sending free vouchers

Customer	Cust1	Cust2
income	2586	1581
months_on_network	75	35
Num_complaints	4	3
number_plan_changes	1	2
relocated	1	0
monthly_bill	121	133
technical_issues_per_month	4	1
Speed_test_result	85%	95%

Data:

The data consists of nearly 10,000 customers. Below are the list of variables and their descriptions.

Variable name	Description
active_cust	The Dependent variable Active-1 (Customer Attrition=No) Not Active – 0 (Customer Attrition=Yes)
income	Estimated monthly income
months_on_network	Months on network (Moths from the service start day))
Num_complaints	Total complaints till now
number_plan_changes	Number of times the service plan is changed
relocated	1- Relocated 0 – Not relocated
monthly_bill	Average monthly bill
technical_issues_per_month	Average monthly bill
Speed_test_result	Percent of (Actual speed/Promised speed)

Download data from below links

https://drive.google.com/file/d/0B7Zo00OSj1W6REM0bC1mRGpjRnM/view?usp=sharing

Analysis Steps

- Data validation
- Data cleaning
- Identification of analysis technique
- Building predictive model
- Removing multicolliniarity
- Final model
- Calculating probabilities for cust-1 & cust-2
- Final observations and inferences
- Documentation of the approach, codes and results

Discussion forum

- Facebook:
  - https://www.facebook.com/pages/Practical-Business-Analytics-Using-SAS-A-Hands-on-Guide/1539167863021194
  - https://www.facebook.com/groups/PracticalBusinessAnalytics/
- Blog :
  - http://practicalbusinessanalytics.blogspot.in/2015/01/contents-practical-business-analytics.html
- Slide share
  - http://www.slideshare.net/21_venkat

References:

- Chapter -7 Data exploration& validation and Chapter -11 Logistic Regression from the book Practical Business Analytics Using SAS: A Hands-on Guide http://www.amazon.com/Practical-Business-Analytics-Using-Hands/dp/1484200446
- SAS code from chapter-7 & Chapter-11 from the book Practical Business Analytics Using SAS: A Hands-on Guide http://www.amazon.com/Practical-Business-Analytics-Using-Hands/dp/1484200446
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