

A close-up photograph of a wine glass pouring a single drop of liquid. The background is a soft, out-of-focus bokeh of blue and white lights. The entire image is framed by a thin white border.

• CUSTOMER CHURN •

BEYOND THE OBVIOUS



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INTRODUCTION

The topic presented by Bhagvan Kommadi at the August eSummit was Customer Churn Prevention – Beyond The Obvious. The presentation was on Wednesday, August 17, 2016.

To start with, the cost of keeping an existing customer is at least 5 times cheaper than the cost of acquisition of a new customer. The focus of every company is to retain customer and avoid customer churn. Customer retention and expanding the revenues from existing customers by up-selling them is a profitable strategy for growth compared to spending just on acquisition. The problem with focusing solely on customer acquisition is like filling a bucket with a leak. Leaky bucket approach is similar to spending more for customer acquisition without ever filling that bucket with a leak. Customer churn happens due to product not addressing the user's needs, slow customer support, product cyclicality, periodic usage, wrong channel strategy, pricing and economic conditions.

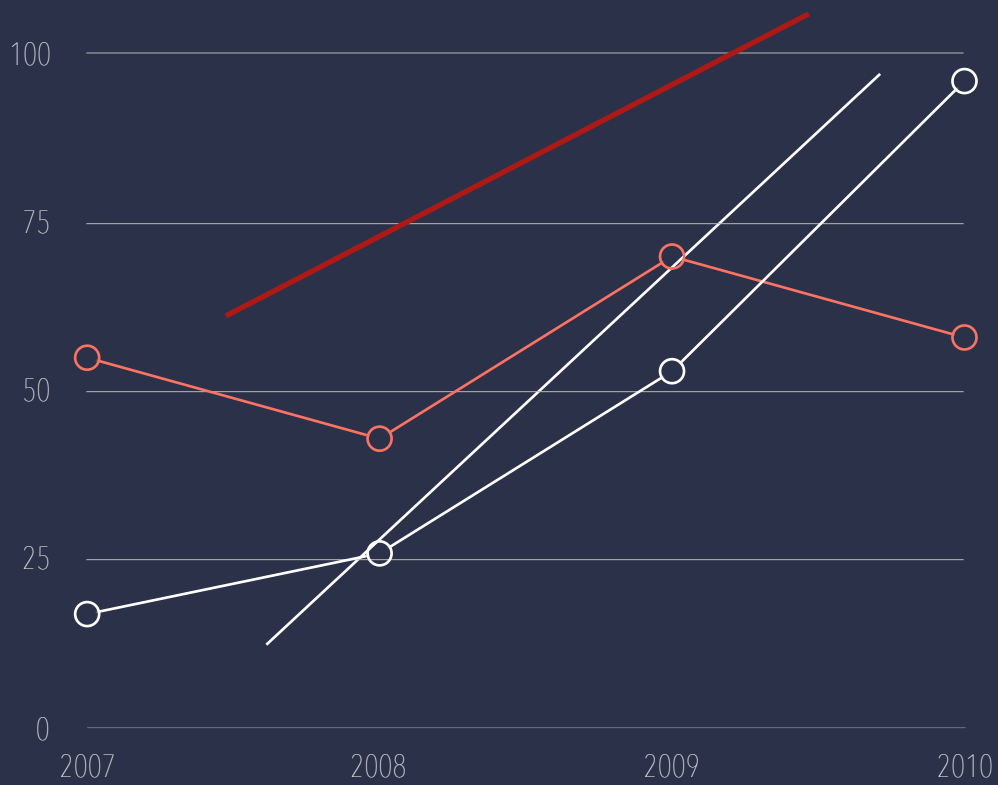
FRAMEWORKS - MACHINE LEARNING

Learning is categorized as supervised, unsupervised and reinforced types. Classification, Regression, and Anomaly detection are supervised learning algorithms. There are specific factors like accuracy, training time and linearity which are important in choosing an algorithm. Features and parameters selected are set before implementing an algorithm for a specific problem. The choice of a machine learning framework is evaluated based on scalability, speed, coverage, usability and extensibility. Google, Microsoft, IBM and AWS offer machine learning frameworks on the respective cloud platforms. These platforms make it easier for developers to build services by abstracting complexity of the algorithms. Open source frameworks for machine learning are Weka, Carrot2, Gate, OpenNLP, LingPipe, Stanford NLP, Mallet, Gensim, Apache Mahout, MLib - Apache Spark, scikit-learn - Python, LIBSVM : Support Vector Machines and Apache Singa.



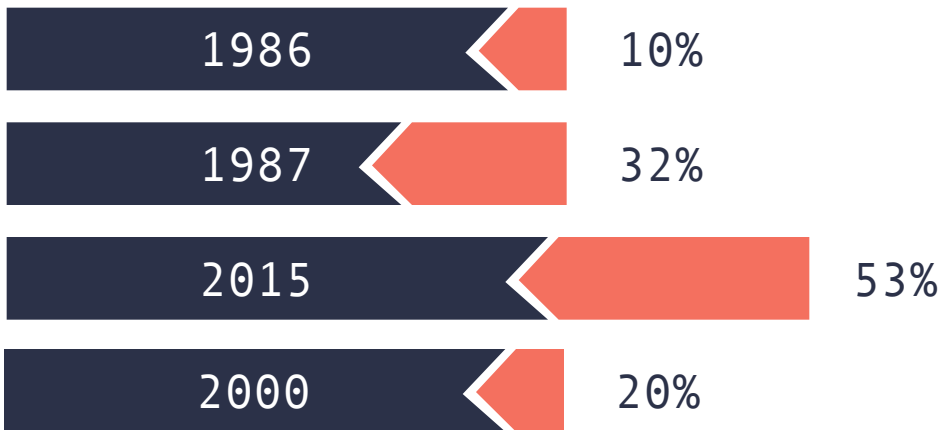
CUSTOMER CHURN PREDICTION

LINEAR REGRESSION



○ Region 1

○ Region 2



Customer Churn Prediction

Different predictive analytics techniques are used based on different levels of sophistication in the context. Traditional techniques such as regression, linear modeling, rules-based algorithms and decision trees are used in simple scenarios. Complex techniques like neural networks and machine learning are used in the medium complex scenarios. Unstructured Data analysis techniques such as text analysis and social network analysis are used in analyzing data for information from news, social media and blogs.

The individual techniques can be combined into compound engines such as net lift modeling. Two or more scenarios are analyzed simultaneously to trace all possible outcomes and choose the right solution for a particular context. Ensemble Modeling is where a suite of models are run and the final response comes from a weighting of the individual model's results. The model-weighting can be refined based on the situation in the case of Ensemble Modeling.

Summary

The machine learning based algorithm for customer churn uses various factors like relationship manager, age, preferences and social media postings. The semantic analysis is used for analyzing unstructured data from the social media postings. The structured data analysis uses regression, classification and clustering methods.



Bhagvan Kommadi

Bhagvan Kommadi, Founder, Architect Corner has around 20 years experience spanning in the creation of products & incubation of Product Startups. Bhagvan Kommadi is currently working as Rapporteur of the Smart City Governance Working Group from Architect Corner. Architect Corner is part of Digital India initiative. He is part of Ask Mentor Board mentoring startups for NASSCOM 10000 startups initiative. He has done Masters in Industrial Systems Engineering at Georgia Institute of Technology (1997) and Bachelors in Aerospace Engineering from Indian Institute of Technology, Madras (1993).