An insight of Scheming of Churn Prediction Model

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Abstract: *The word churn is not new for the communication industries. With expansion of Information technology with telecommunication and the launching of smart phone was a revolutionary step in the field of IT and Telecommunication. The moment of customer from one company to another company is accountable under the churn. This all happened due to services and facilities provided by the companies to their customer. Customers are the people who never stay with company if companies' services are not in proper manner or user centric. Now due to this situation companies are struggling for retaining their customer and also making hard work to sustain customer. Now porting of cell numbers facilities is again a big challenge for companies. The essential accomplishment and footstep can take to put off them from departure for the cause. Consequently there is requirement to recognize and make straightforward model to deal with churn problem. This paper tries to intend a trouble-free line of site to conquer from the difficulty using simple data mining tools and process.*

Key Words: *Churn, customer, Telecommunication, Confusion, matrix*

1. INTRODUCTION:

In the normal way, the word "Churn" gives information about the customer's action of migration from the services of company. As per this exceptional and unexplainable growth of Information Technology, these days in the telecommunication marketplace, resist is on their intense. Also providing services according to options available in the cell are further more analogous. Hence the present state of affairs show the way to condensed customer faithfulness.

The essential accomplishment and timely taken corrective action can prevent them from departure. The departure or migration of the customer from the services of the company directly affected the revenue of the company as well as increasing the competition for the company by which migrated customer taking services. This is dual loss for the company and revenue of the company.

In addition, get hold of new customers bring upon more expensive than keep hold of existing customer. Intended for this motive, investigate and examine the record and activity with approach is the foundation for considerate the requirements of customers. In general a cellular company uses churn management to clarify the migration of the customer and the remedies taken as the action for these. As per the assortment and solidity of the cellular companies, it needed a tangible framework to make grip on all types of churn problems to reduce churn tempo.

In the present scenario maximum cellular companies are suffering from the harsh thrashing due to competition of bandwidth, spectrum and services. The data services, voice services, roaming services and validity service get tuff competition insight. Now customers are taking full advantages for that situation. But there is no doubt, loosing customer in the current situation will be a major loss because its gives a big competition in the market. So there is essentiality that we have to go for the development of the model to efficiently observe the activity of the customer on daily –weekly or monthly basis and predict the churn id exist there or churn behavior of the customer. So timely remedies or offers may be given to the customer and retain him in the network. Here in the study we are trying to design simple efficient model to study the attitude and behavior of the customer in the network who are accountable under the churn.

2. DATA MINING TECHNIQUES FOR CHURN PREDICTION

The predictive model is the model which is concern from the prediction of behavior of the customer for the future sustainability. The past behaviors of the customer and running attitude both are sufficient to predict the future step of the customer. The science of customer relationship management and data mining tools are used to produce model to modeling the behavior of the customer. It gives the likelihood of further situation and approaches of the customers.

Models which are used to characterize and differentiate between churners and non-churners be able to be categorized into traditional models or techniques of CRM and data mining.

Decision trees: Decision trees typically consist of two major stepladders, the first one is tree building and another one is tree pruning. The first step tree-building is concern from the recursively partitioning of the training sets as per the values of the characteristic. The second part is partitioning procedure which is continues in anticipation of entire data,

or the majority of the records in every partitions hold indistinguishable values. A few branches might be uninvolved because these were concern from the noisy data.

The second step pruning includes pick and eliminate the kindling containing the chief estimated error rate. The step of the activity of the tree pruning is recognized to improve the predictive correctness of the decision tree, while reducing the complexity.

Regression Analysis: This is one of the very popular traditional techniques or one can say quantitative method which deals with forecasting of customer pleasure and fulfillments. This is based on oversees learning models. The regression models works with the dataset which are having repository of precedent observations, for which both the value of the explanatory attributes and the value of the continuous numerical target variable are known. It gives future prediction on the basis of previous data and a trend in the data exists.

Fuzzy Logic: The Fuzzy Logic is a theoretically trouble-free to understand. The mathematical and numerical thoughts at the back of fuzzy way of thinking are very straightforward. The neutrality of this technique makes it preferable for other and further techniques. The fuzzy logic is supple, lenient of inaccurate data, also be able to represent nonlinear functions of random complication. This knows how to be combines with conventional control methods. In numerous situations fuzzy organizations expends the thought of the conventional control methods and make things easier for implementation. On the subject of the cellular business; there is less job achieved concern to churn prediction using the fuzzy logics.

Neural Networks: Nowadays the neural network is successfully running in the scene for estimating the complicated non-linear functions, which provides us the upcoming trends. The neural networks are a comparable data dispensation organization that possesses the capability to be taught. The perception is insecurely concern to biological brain and has productively been functional to lots of types of troubles, like classification, control, and prediction.

3. Churn Model Experimental FRAMEWORK

The elderly data mining churn model is model that is constructed via data mining tools for forecasting customers who might be churned. The customers are typically achieved by means of a data mining churn model. The customers by means of privileged scores are “targeting customers” which means such customer has possibilities to change the company in the future. If this information clearly predict by the company particularly customer wise, at that moment company can arrange a campaign for those target customers. By the help of campaign they can reduce the movements of those customers and decline the churn rate.

In the series of the study of the churn prediction confusion matrix, lift chart, or cumulative gain chart are over and over again used to assess the correctness of a model. The visual representation of cumulative gains and lift charts gives advantage of use of predictive model. Even though plenty of novel analytic techniques are used to design complete churn models, but still it is hard to define churn problem.

To design any real world churn prediction model there is need of three basics:
(1) Modeling,
(2 Predicting,
(3) Retention Evaluating.

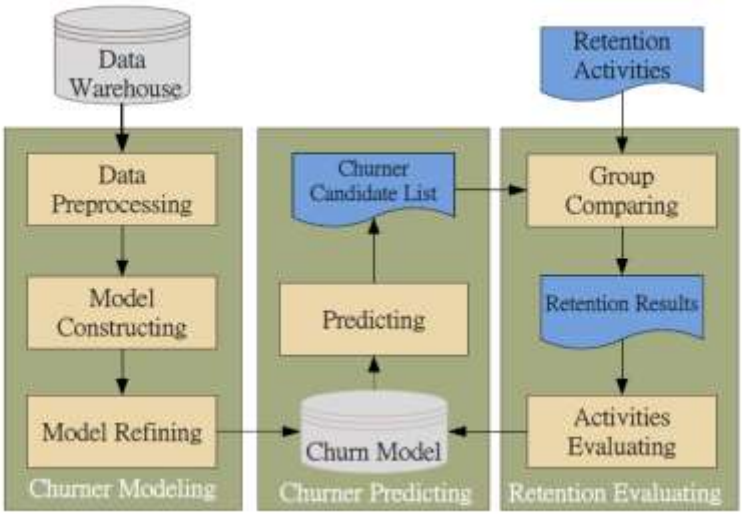

Figure 1: Investigational structure for Churn Modeling

An investigational structure which is used to help in adoption of churn model in the telecom industry is as shown. The investigational structure steps are churner modeling, churner forecasting or predicting, and components for evaluating the discovered churn model. At the very first stage churn model designed. Specify churner candidate according to conditions for retention. Lastly, to assess the effectiveness of retention, special retention actions are intended and used.

4. PROPOSED MODEL:

The churn prediction is not possible to solve in the single steps. There is need to assemble two basic data mining techniques with self designed churn algorithm. Churn algorithm are specially used to purify the set of data as per the condition satisfaction of the algorithm. Proposed model for churn prediction consists of following steps:

- Import dataset from warehouse
- Apply Churn Algorithm-1: Classification of churner data
- Applying clustering (K-mean clustering) for purify the data
- Select Possible Churn dataset
- Apply Churn Algorithm-2: Predictive Assessment
- Final Churner dataset

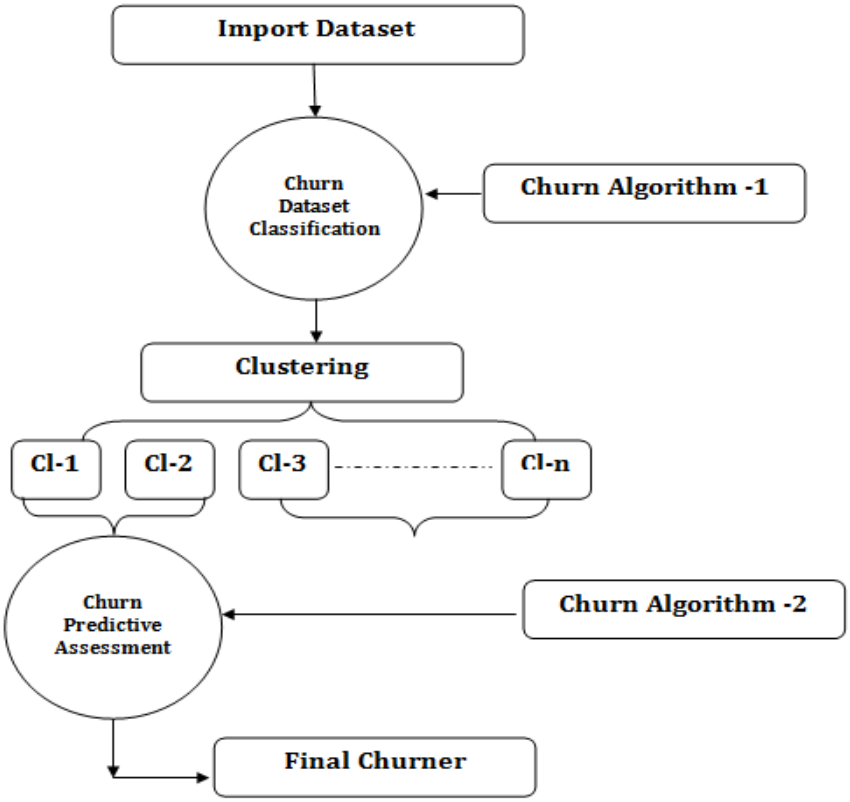

Figure 2: The propose model to find Churner

At the first step dataset is imported from the data warehouse of the organization. This is the dataset which is concern to the time variant and possible of churning. Apply classification algorithm in association of churn algorithm to classify the data. The classified dataset are now subject of clustering. There are number of clusters. Top clusters as per algorithm satisfaction have possibility of churning. Now, possible churn dataset is subject of churn predictive assessment. After this step churn algorithm-2 applied for final purification of churner data.

5. CONCLUSION:

The proposed model in the study gives a state forward way to find out the churner in the dig dataset. With the help of data mining tools the process get smoother and easy. Specified churn algorithm-1 and 2 gives capability to resolve recital kind of crisis which is openly not solve by any numerical or statistical formula or the algorithms. The ordinary data mining tools classification and clustering with specified algorithm are capable to find out churner dataset for necessary action.

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