Telecom Churn

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CHURN

There are two main models of payment in the telecom industry - postpaid and prepaid.
In the postpaid model, when customers want to switch to another operator, they usually inform the existing operator to terminate the services, and we directly know that this is an instance of churn.
However, in the prepaid model, customers who want to switch to another network can simply stop using the services without any notice, and it is hard to know whether someone has actually churned or is simply not using the services temporarily.

Understanding the Business Objective and the Data

The dataset contains customer-level information for a span of four consecutive months - June, July, August and September. The months are encoded as 6, 7, 8 and 9, respectively.

The business objective is to predict the churn in the last (i.e. the ninth) month using the data (features) from the first three months. To do this task well, understanding the typical customer behaviour during churn will be helpful.

Understanding Customer Behaviour During Churn

Customers usually do not decide to switch to another competitor instantly, but rather over a period of time. In churn prediction, we assume that there are three phases of customer lifecycle :

- **The 'good' phase:** In this phase, the customer is happy with the service and behaves as usual.

- **The 'action' phase:** The customer experience starts to sore in this phase, for e.g. he/she gets a compelling offer from a competitor, faces unjust charges, becomes unhappy with service quality etc. In this phase, the customer usually shows different behaviour than the 'good' months.

- **The 'churn' phase:** In this phase, the customer is said to have churned. We define churn based on this phase. Also, it is important to note that at the time of prediction (i.e. the action months), this data is not available to us for prediction.

Data Preparation

The following data preparation steps are crucial for this problem:

- **Derive new features** This is one of the most important parts of data preparation since good features are often the differentiators between good and bad models. We will use our business understanding to derive features that we think could be important indicators of churn.
- **Filter high-value customers** As mentioned above, we need to predict churn only for the high-value customers. Define high-value customers as follows: Those who have recharged with an amount more than or equal to X, where X is the 70th percentile of the average recharge amount in the first two months (the good phase).
- **Tag churners and remove attributes of the churn phase** Now tag the churned customers (churn=1, else 0) based on the fourth month as follows: Those who have not made any calls (either incoming or outgoing) AND have not used mobile internet even once in the churn phase. The attributes we need to use to tag churners are :-
- total_ic_mou_9
- total_og_mou_9
- vol_2g_mb_9
- vol_3g_mb_9

Thanking You