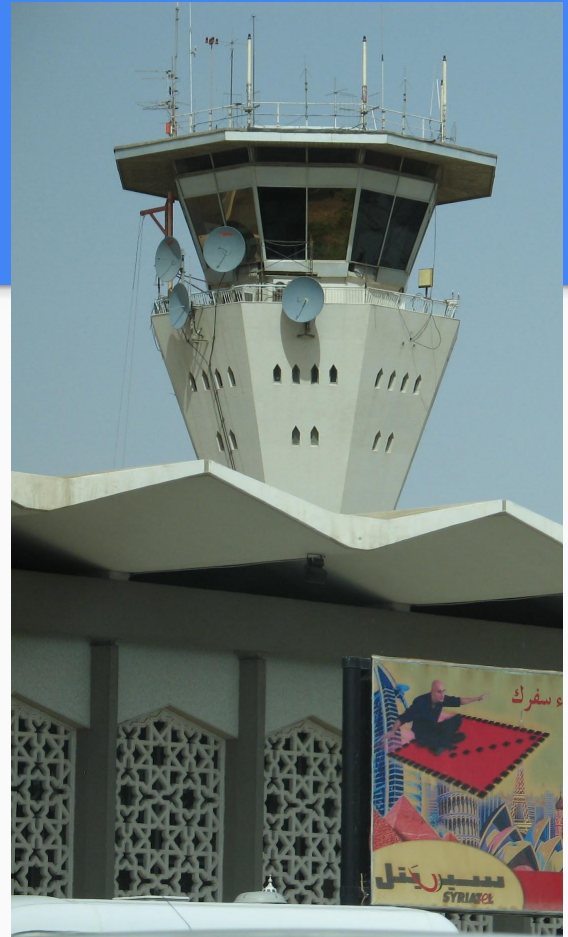# A Data Driven Investigation of SyriaTel Churn Rates

By Salome Grasland

Business Understanding

- SyriaTel is a telecommunications company dealing with both domestic and international calls
- SyriaTel has a churn rate of 14.5% customers annually
- An average churn rate for a good company is 5 to 7%
- Wants to understand why customers are churning

The Solution

Using classification machine learning model we will answer:

- What is the relationship between churn and other features?
- Which features increase the likelihood of churn?

Metric to use: Recall

- Primary concern is false negatives– predicting a customer will not churn when they do.
- It is more costly for the company to predict that a customer would stay when they actually churn

The Model

XGBoost Model

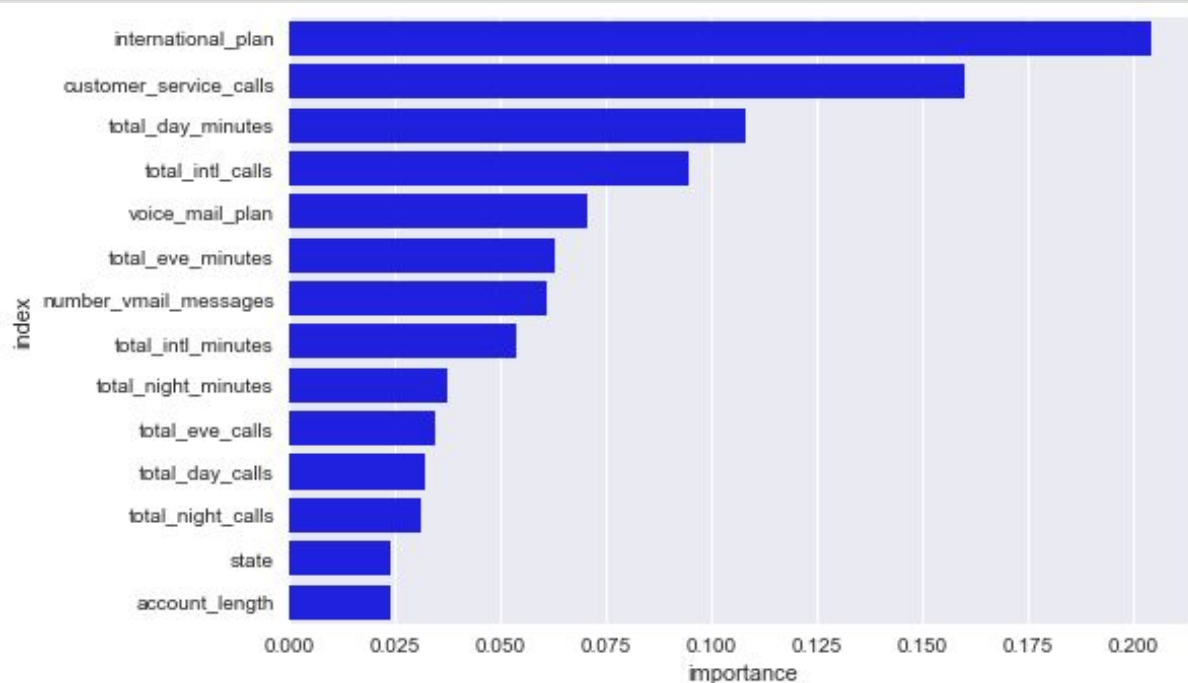This model was chosen because it works well on structured datasets

Recall

The model had a recall score of 0.99 meaning it classified customers correctly 99% of the time

False Negative

The model only misidentified 4 customers who did churn out of 2137 customers.

What features impacted churn?

The three features that had the highest impact on churn rate were:

'International_plan': Customers with an international plan were more likely to churn

'Customer_serivce_calls': Customers that had to contact customer service more often were more likely to churn

'Total_day_minutes': Customers that used more daily minutes were more likely to churn

How Do International Plans Impact Churn?

Churn by International Plans
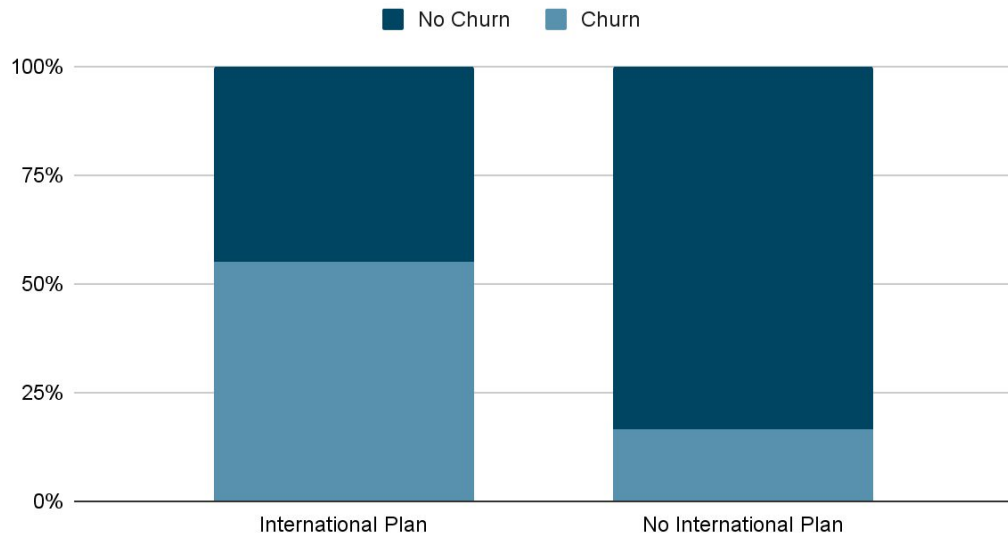
No Churn Churn

About half of the customers that have an international plan churned compared to about 20% of customers who did not have an international plan.

How Do Customer Service Calls Impact Churn?

4 calls
- On average customers who churned made 2.2 customer service calls
- 4 calls being the point where more than half of customers churned

● Having to contact customer service makes a customers more likely to churn

International Services
Customers who churned called in most about international plans, total international calls, and total daily minutes

● Customers who used more than 235 daily minutes are more likely to leave the company

How Do Daily Call Minutes Impact Churn?

After about 275 total day minutes churn becomes dominant.

Customers who were making daily calls for more than 275 total minutes were more like to churn than customers who totaled less than 275 minutes .

Recommendations

The recommendation we make to SyriaTel is:

- Create an international team, whose focus is dealing with customers using international plans

- Incentivize resolving customer issues in 1 to 2 calls

- Funnel customers calling in for the 3rd time to senior agents who can provide the best help

- Audit high use customer accounts

- Improve customer service training on international services

Further Work

SyriaTel could benefit from:

- collecting country by country data
- allocate funds based on countries that generate the most profits for international plans
- look at countries that have high churn rates to see what competitors offer that SyriaTel does not

Thank you!

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