

# A Data Driven Investigation of SyriaTel Churn Rates

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# 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

		Actual	
		Churn	Not Churn
Predicted	Churn	<b>True Positive:</b> CST predicted to churn and they do churn	<b>False Positive:</b> CST predicted as churn but does not churn
	Not Churn	<b>False Negative:</b> CST predicted not to churn but does churn	<b>True Negative:</b> CST predicted not to churn and they do not churn

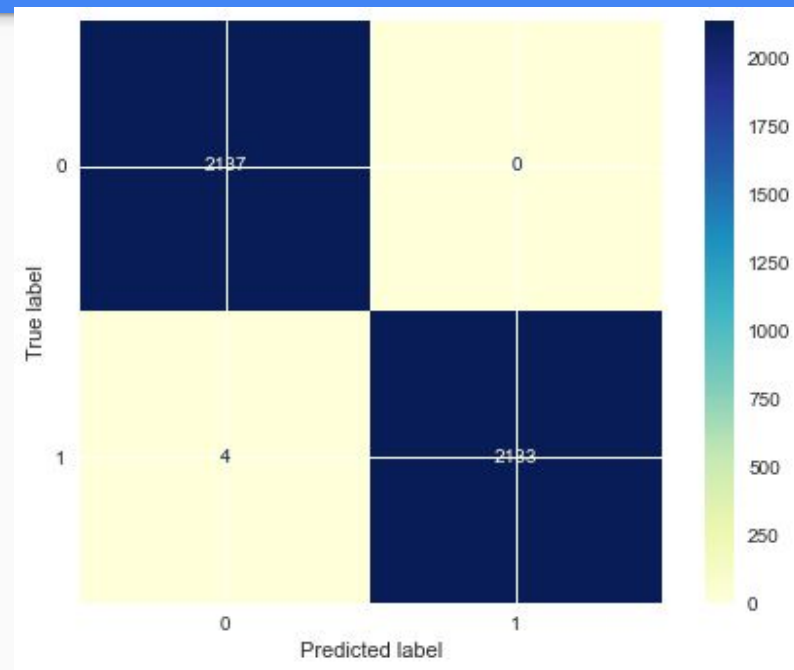
# The Solution

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

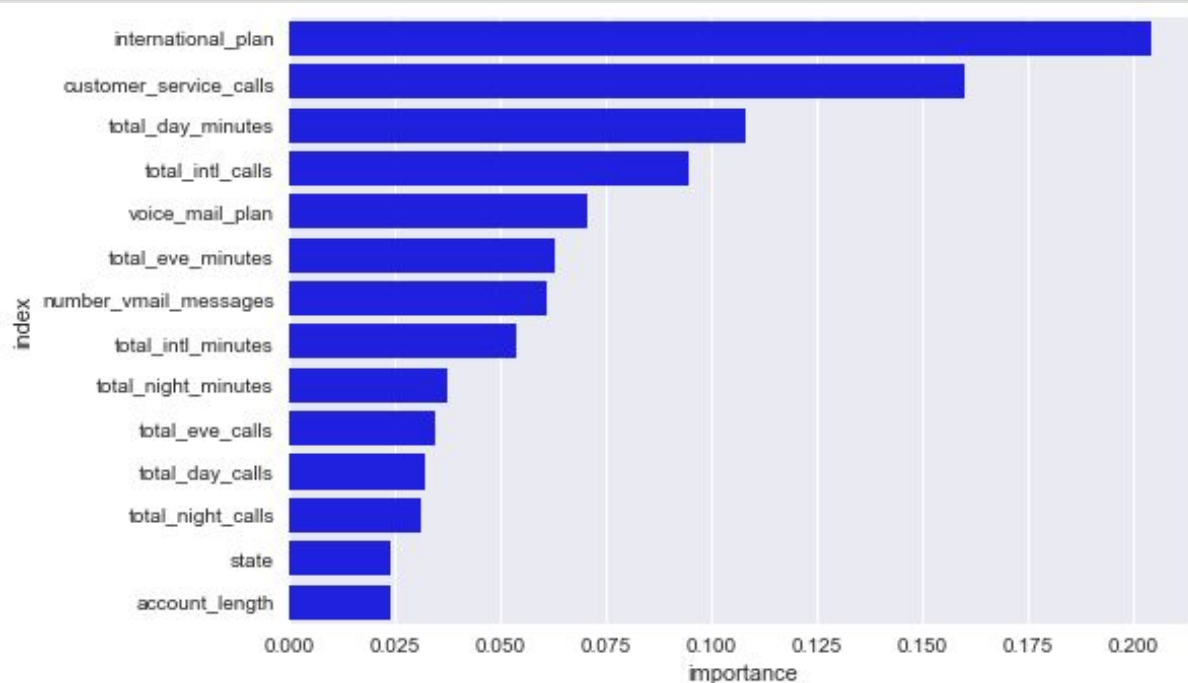
**Recall**

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:

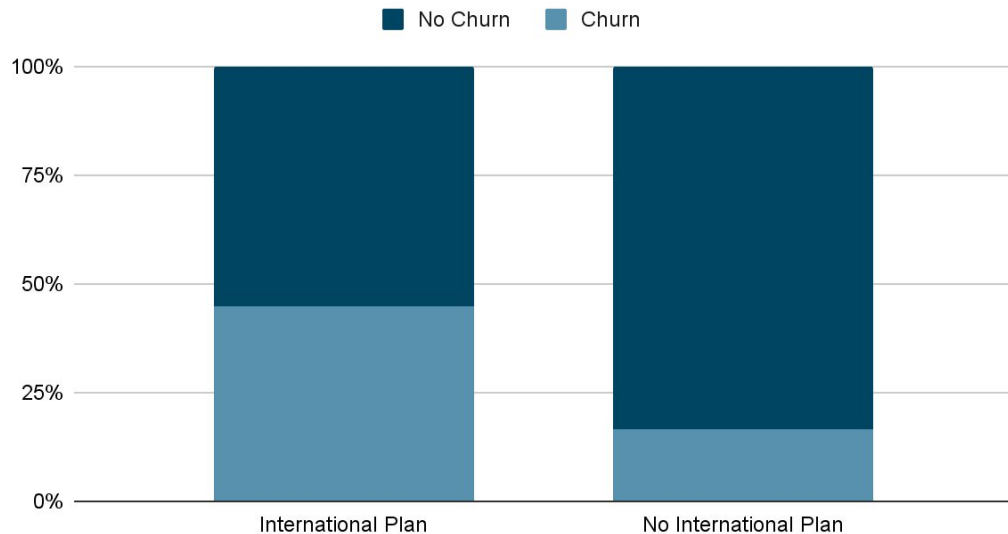
‘International\_plan’: Customers with an international plan were more likely to churn

‘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



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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