

# SyriaTel Churn Analysis

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# Agenda

Business problem:

Telecom  
Companies

SyriaTel's  
Customers

Data Trends

Stats and Machine  
Learning

Implementing  
Models

Next Step

Results &  
Recommendations

# Business Problem

Customer Churn

# Churn in Telecom Companies

- Most telecom companies find it less expensive to retain an existing customer versus onboarding a new one.
- We will examine any predictable patterns in SyriaTel telecom company in order to implement a strategy that will allow us to increase the likelihood of retaining customers.



# SyriaTel Data

- Data consists of: 21 columns and 3,333 rows
- Customers' main features:
  - Account length
  - Total Day Charge
  - State
  - Voicemail Plan
  - International Plan
  - Churn

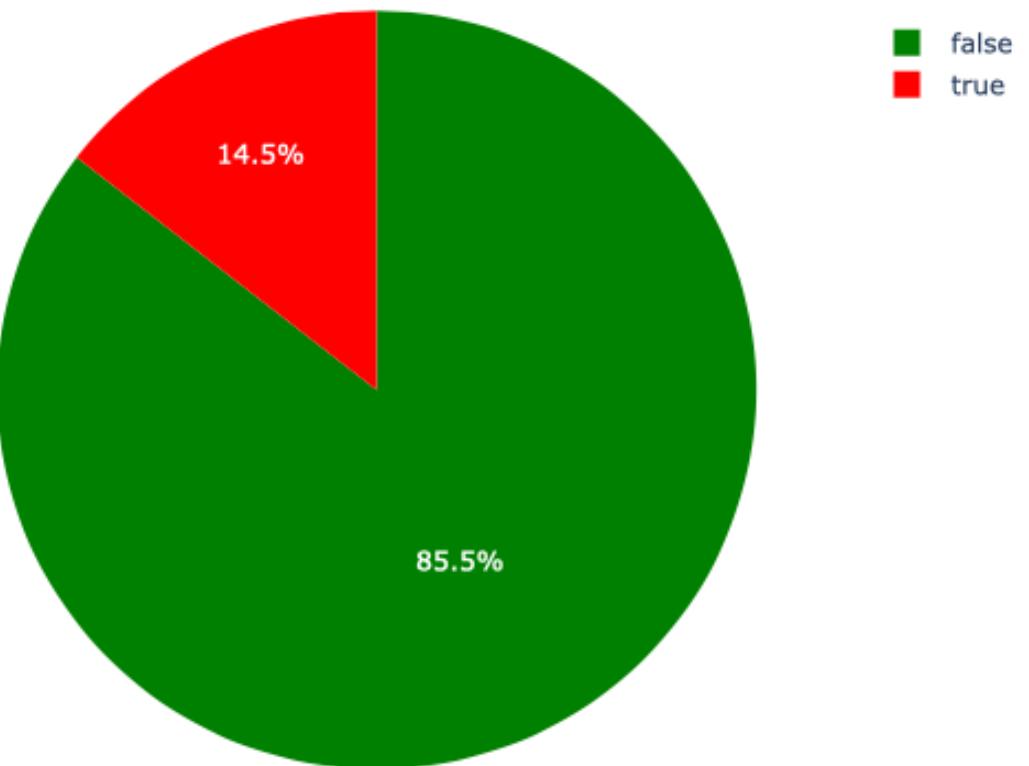


churn	state	account length	international plan	voice mail plan	number vmail messages	area code	total day minutes	total day calls	total day charge	total eve minutes	total eve calls	total eve charge	total night minutes	total night calls	to
0	KS	128	no	yes	25	415	265.1	110	45.07	197.4	99	16.78	244.7	91	
0	OH	107	no	yes	26	415	161.6	123	27.47	195.5	103	16.62	254.4	103	
0	NJ	137	no	no	0	415	243.4	114	41.38	121.2	110	10.3	162.6	104	
0	OH	84	yes	no	0	408	299.4	71	50.9	61.9	88	5.26	196.9	89	
0	OK	75	yes	no	0	415	166.7	113	28.34	148.3	122	12.61	186.9	121	
0	AL	118	yes	no	0	510	223.4	98	37.98	220.6	101	18.75	203.9	118	
0	MA	121	no	yes	24	510	218.2	88	37.09	348.5	108	29.62	212.6	118	
0	MO	147	yes	no	0	415	157.0	79	26.69	103.1	94	8.76	211.8	96	
0	LA	117	no	no	0	408	184.5	97	31.37	351.6	80	29.89	215.8	90	

## Would SyriaTel lose a customer “soon”?

- Currently the churn rate is 14.5%.
- We will predict whether a customer is likely to leave SyriaTel and identify the reasons of a customer churning.
- We will recommend cost-effective solutions to SyriaTel on how to reduce churn.

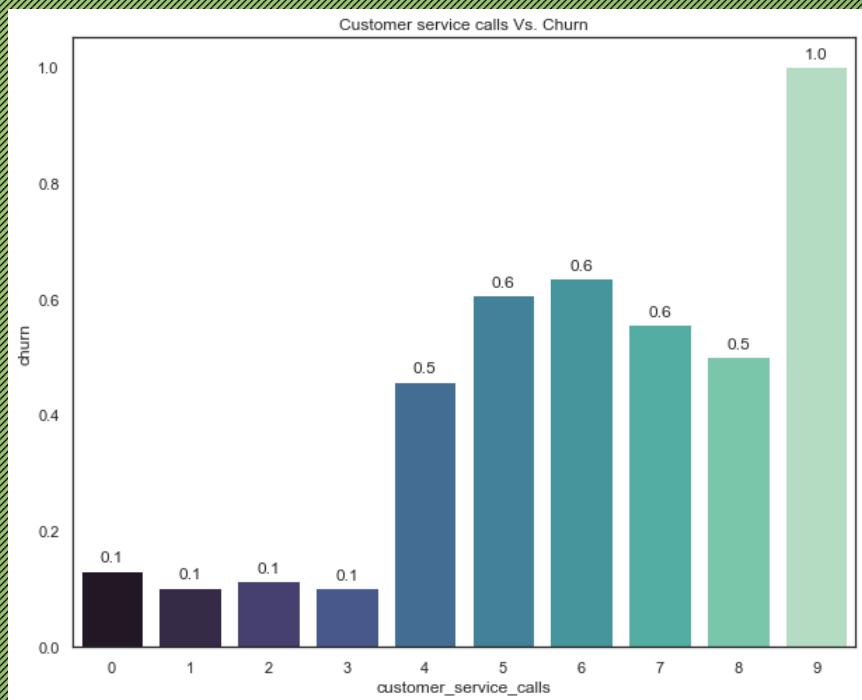
Distribution of Churn



# Stats and Machine Learning

# Stats on Churn

## Customer Service Calls

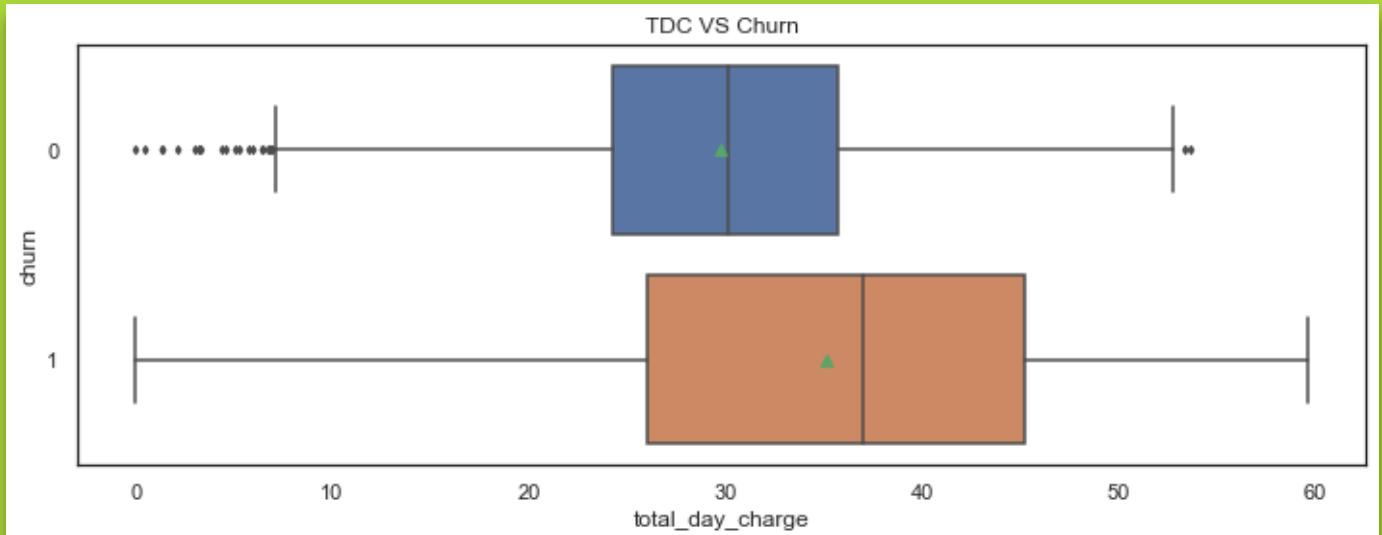


- After four Customer Service calls a customer is likely to churn.

# Charges

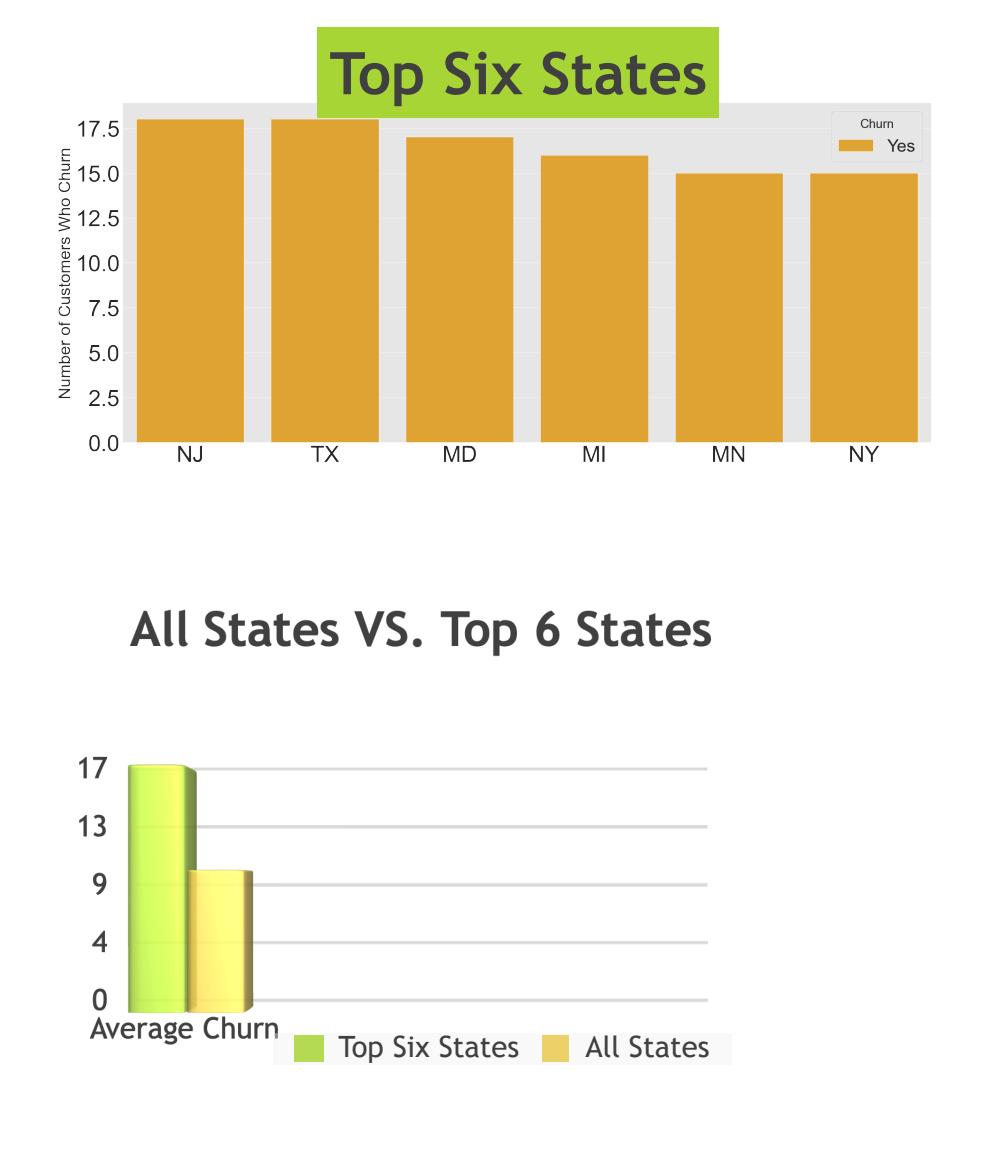
- Total day charges lead to more churning.
- Exceeding \$38 results in more churning

Total Day Charge



# States to Focus on

- On average, the top six states had six more customers churning compared to the average churn of all the states together.



# Results of our Model

- We ran numerous algorithms to predict churn.
- We chose the model that posted the highest score.

Model: XGboost

Test Accuracy: 96.10%

Recall: 94.87%

Precision: 85.55%

# Recommendations

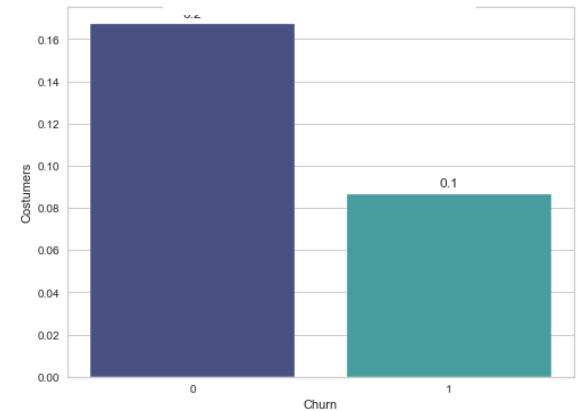
## Voicemail Plan

- Customers with a voicemail plan are twice as less likely to churn.
- We recommend offering a voicemail plan to customers who currently do not have one, as part of the incentives used to retain customers.

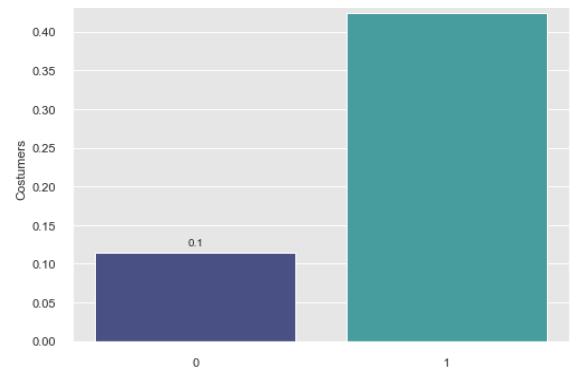
## International Plan

- Customers who have an international plan were four times as likely to churn.
- SyriaTel should consider eliminating the current international plan and consider replacing it with a subscription package which would include a certain number of international calls per year.

Voicemail Plan



International Plan



# Recommendations

## Customer Service Calls

- We recommend adding an incentive to customers after the third service call. Possible incentives may include: three weeks free of charge before subscribing for a year or gifting customer a voicemail plan for 3 weeks.



## Total Day Charge

- We recommend offering customers a reoccurring monthly fee as opposed to the current method of charging per min.



# Recommendations

## States

- We recommend focusing on customers located in NJ, TX, MD, MI, MN and NY, as they have been churning the most.
  
- Building an alert when these states subscribe and offering them a new loyalty package after being with the company a certain number of months.

# Next Steps

- Gather further data
- Implement our recommendations and analyze the cost
- Examine the option of using a different vendor or temporally partnering to offer incentives and promotions when a customer seems dissatisfied

Thank you



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