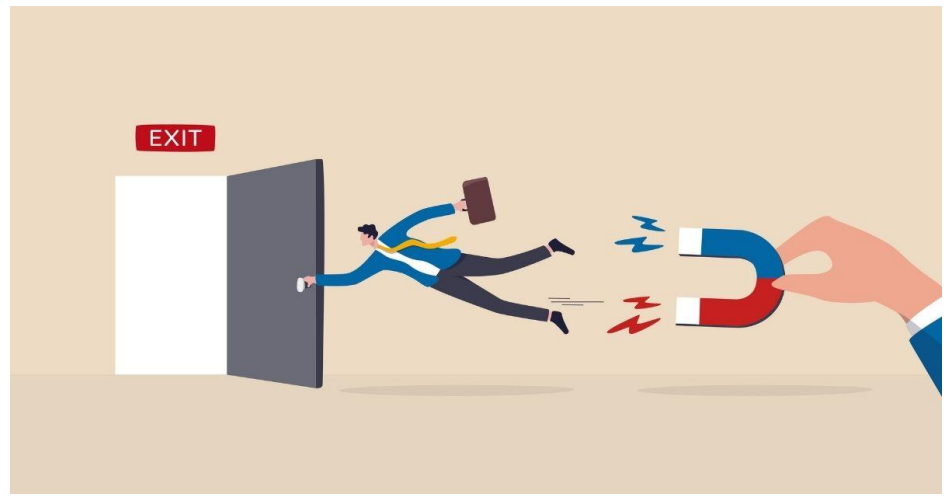

Predicting Churn

— Andro T —

Targets



- Which customers are the most likely to churn?
- What things can SyriaTel do to reduce customer churn?
- Which new customers should be targeted with new marketing campaigns?

Why does this matter

Higher Churn => Lower Retention => Less Revenue

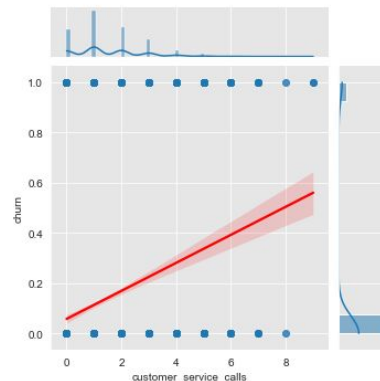
For every customer we lose, we reduce revenue, and if we want to maintain the revenue, we would have to spend money to acquire new customers, which would negatively affect the bottom line.

Which customers are the most likely to churn?

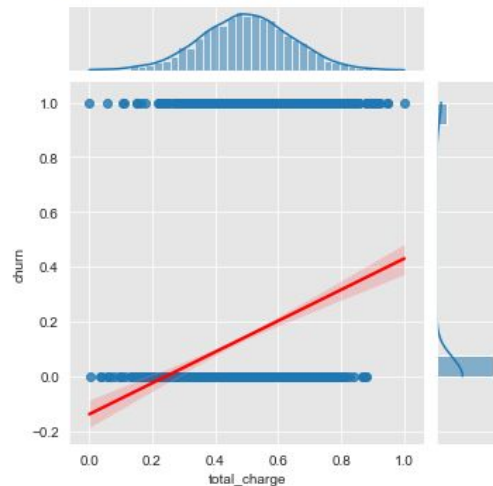
In order of significance

- Higher Charges
- Not having a Voicemail Plan
- Customers with a lot of Customer Service Calls
- Customers that don't place International Calls
- Customers with an International Plan

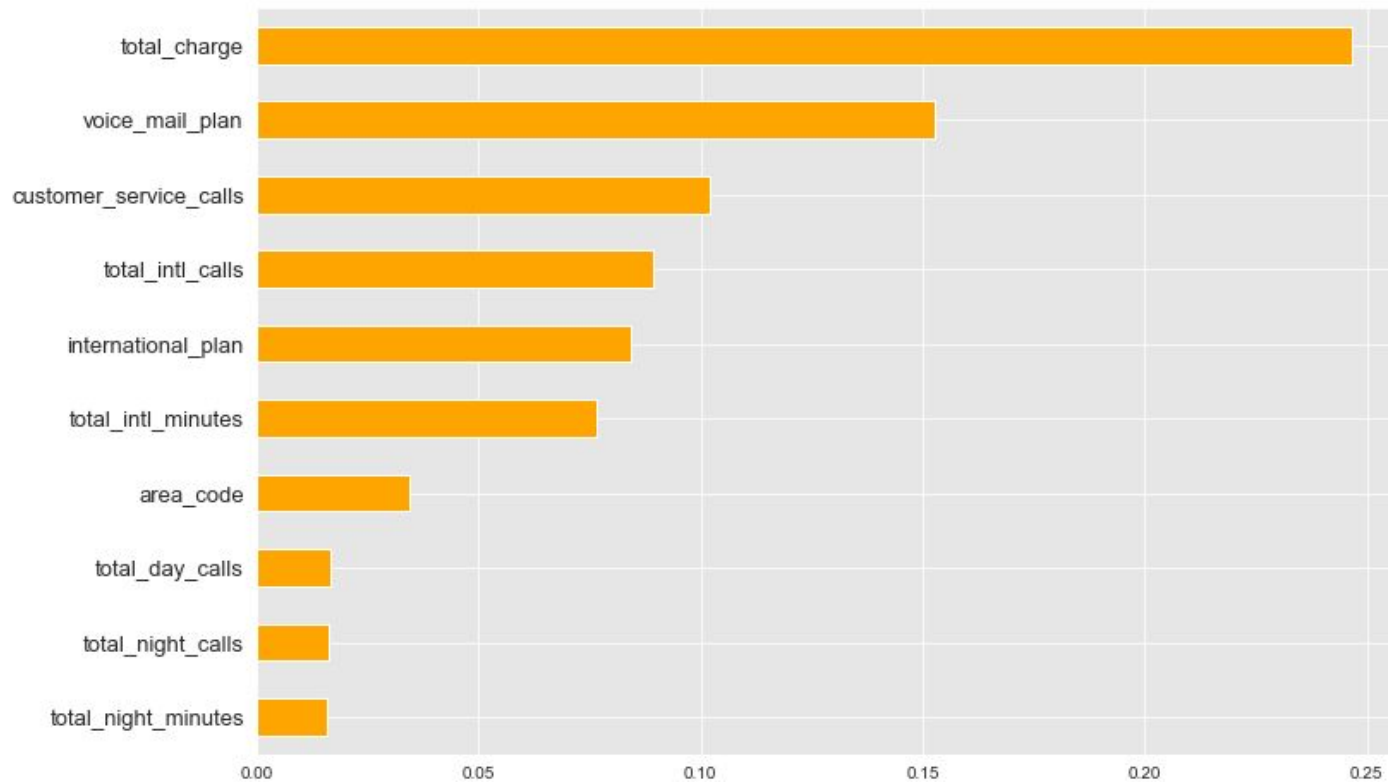
customer_service_calls vs price



total_charge vs price



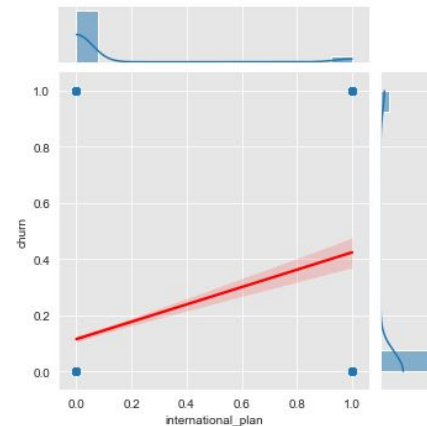
Best Features - XGBoost



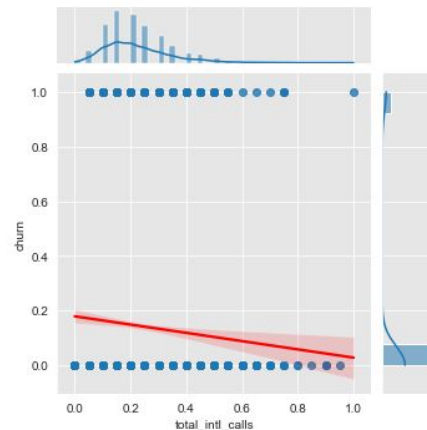
How to reduce Customer Churn

- Reduce Total Charge
 - Potentially set a Cap
 - Distribute charges across the customer base more evenly
- Encourage people to sign up for the Voicemail plans
 - Incentivize for new and existing customer
- Fix the International plan disbalance
 - More International Calls leads to less churn
 - Having an international plan leads to more churn
- Decrease the number of Customer Service Calls

international_plan vs price



total_intl_calls vs price



Attracting Long-term Customers

- Affordable Rates
- Introductory Set-up
 - Ensure that customers are aware of the Voicemail and International packages available
 - Price the additional features more competitively
- Focus on International Customers
- Limit International package to people who will use it

Additional Work

- Larger Dataset
- Adding time as a feature
- Personal Information (age primarily)
- Customer feedback
- A/B testing
- Deep Dive on International Calls

Thank You for Listening!
Any Questions?

Appendix

Results of the Best Performing Model (DT):

Accuracy Score: 98.1%

Recall Score: 99.1%

F1 Score: 93.2%

AUC: 98.5%

Mean Training Score: 96.21%

Mean Test Score: 98.08%

Confusion Matrix

	False	True
False	708 (85.0%)	15 (1.8%)
True	1 (~0%)	110 (13.2%)

Next Best Result (XGBoost)

Accuracy Score: 97.4%

Recall Score: 97.2%

F1 Score: 90.6%

AUC: 97.3%

Mean Training Score: 96.12%

Testing Accuracy: 96.52%

Confusion Matrix

	False	True
False	706 (84.7%)	19 (2.3%)
True	3 (0.4%)	106 (12.7%)