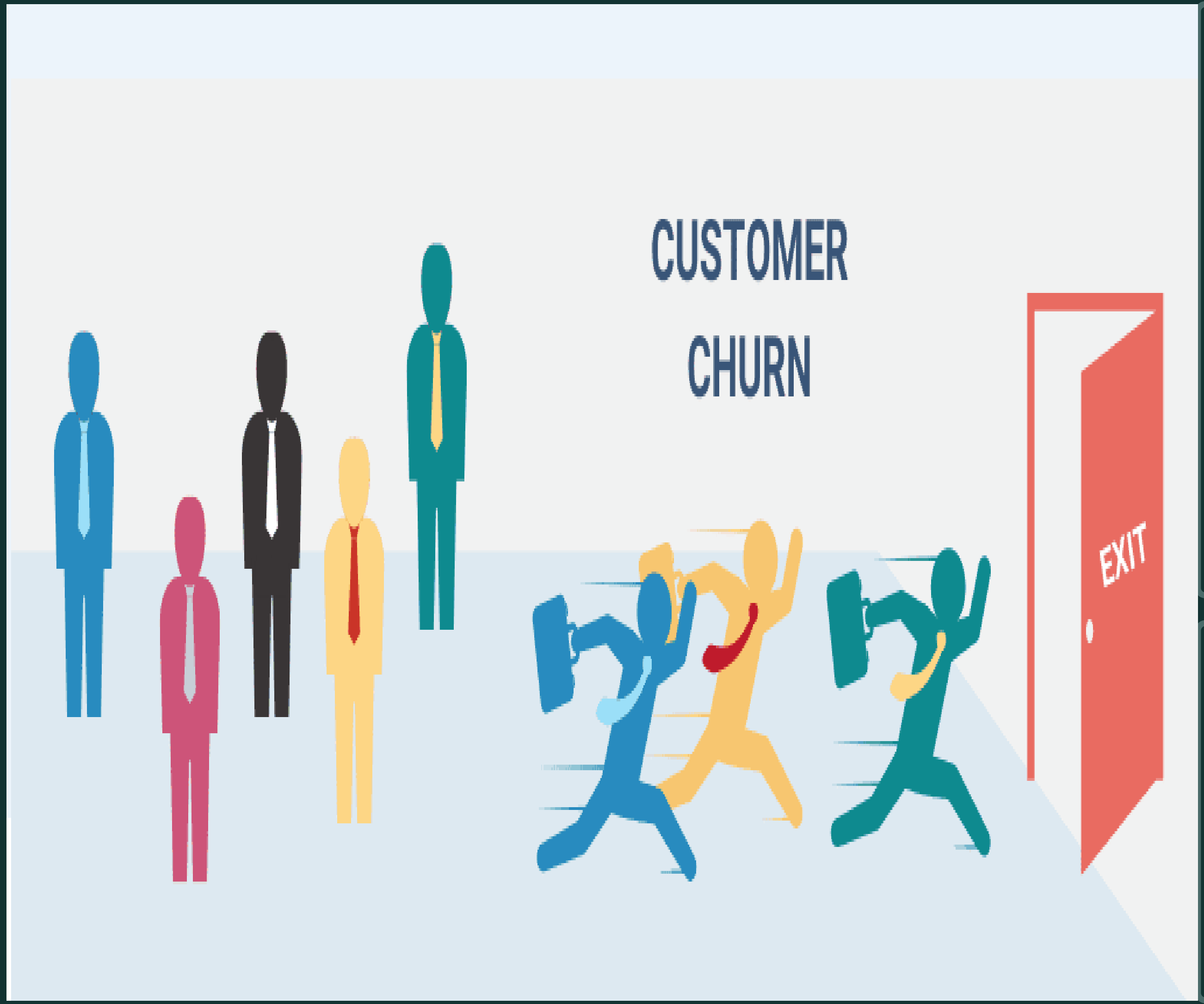
SyriaTel Customer Churn Prediction

Identifying at-risk customers before they leave

Overview



Business Challenge

Customer churn poses a major threat to SyriaTel, leading to revenue loss and increased marketing expenses

Our Approach

Build a predictive model that identifies customers at high risk of churning, allowing SyriaTel to act before they leave

Business Value

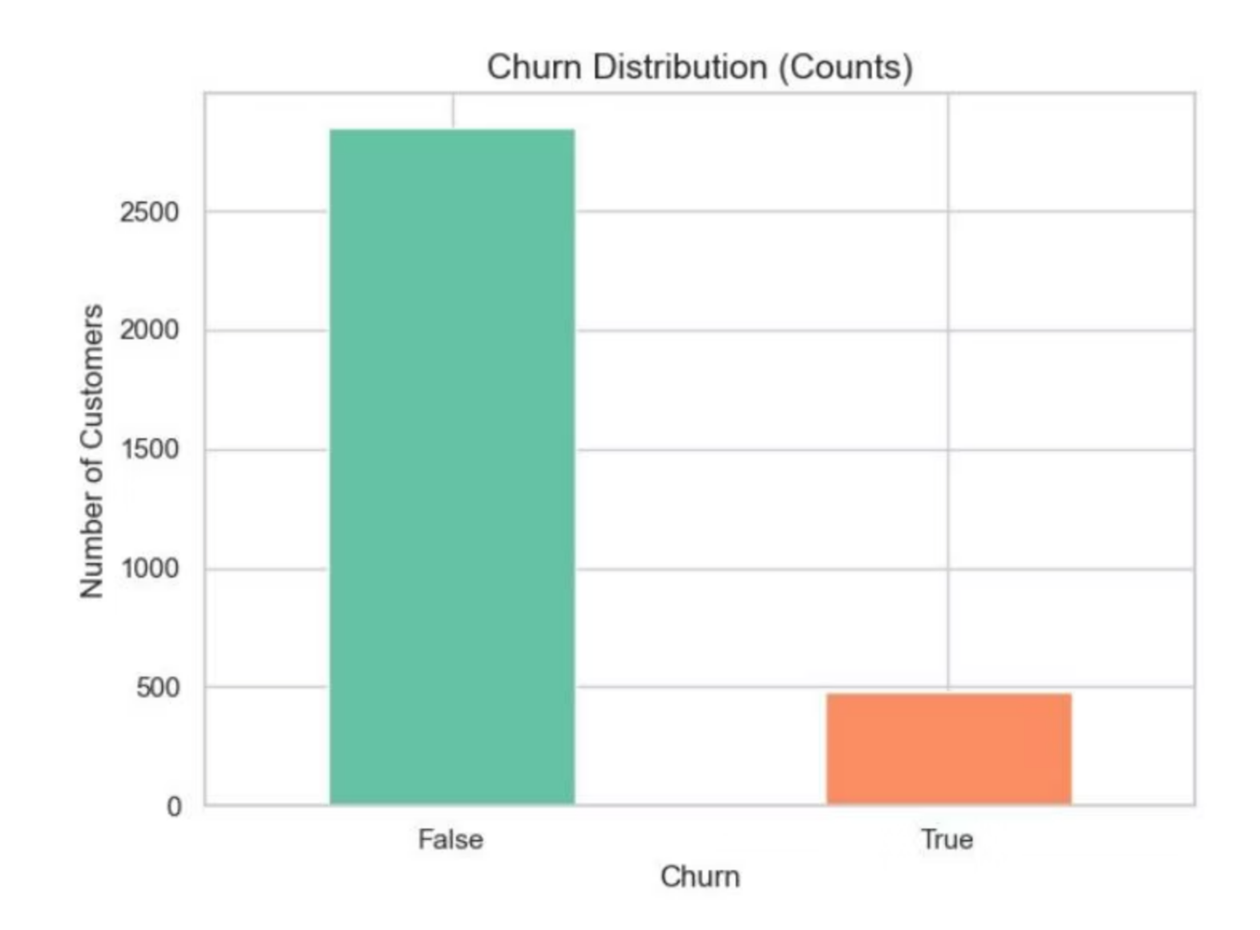
Retaining existing customers is significantly more cost-effective than acquiring new ones

Business and Data Understanding

We analyzed SyriaTel's customer data to understand churn patterns:

- 3,333 customer records analyzed
- 21 features including call patterns, billing, and service interactions
- 14.5% overall churn rate (483 customers)

Our goal: Identify which factors most strongly predict when a customer will leave SyriaTel.



Key Churn Indicators

Customer Service Calls

Customers who contacted customer service multiple times were significantly more likely to churn

Total Charges

Higher bills strongly correlated with increased churn risk

International Plan

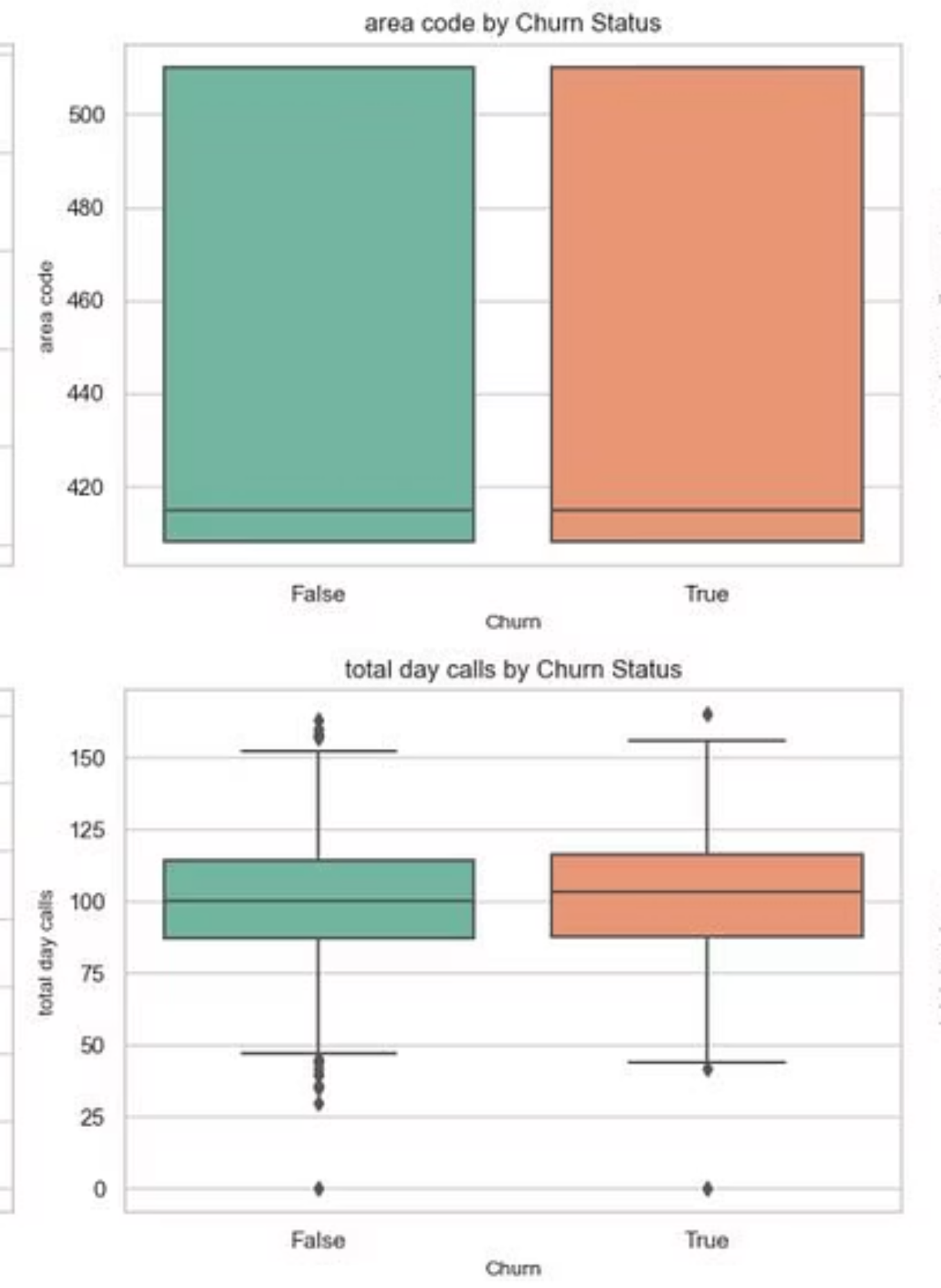
Customers with international plans showed disproportionately higher churn rates

These patterns suggest customers are leaving due to billing concerns and unresolved service issues.

Customer Usage Patterns

Customers who churn tend to have:

- Higher daytime minutes and charges
- More customer service calls
- Fewer voicemail messages



Modeling Approach

Our Process

1. Prepared data by creating meaningful derived variables
2. Selected the 15 most predictive features
3. Tested four different prediction algorithms
4. Optimized the best-performing model

We focused on creating a model that would minimize false positives - never flagging a customer as "at risk" unless they were truly likely to churn.

1

Logistic Regression

Simple, interpretable baseline model

2

Decision Tree

Captures non-linear relationships

3

Random Forest

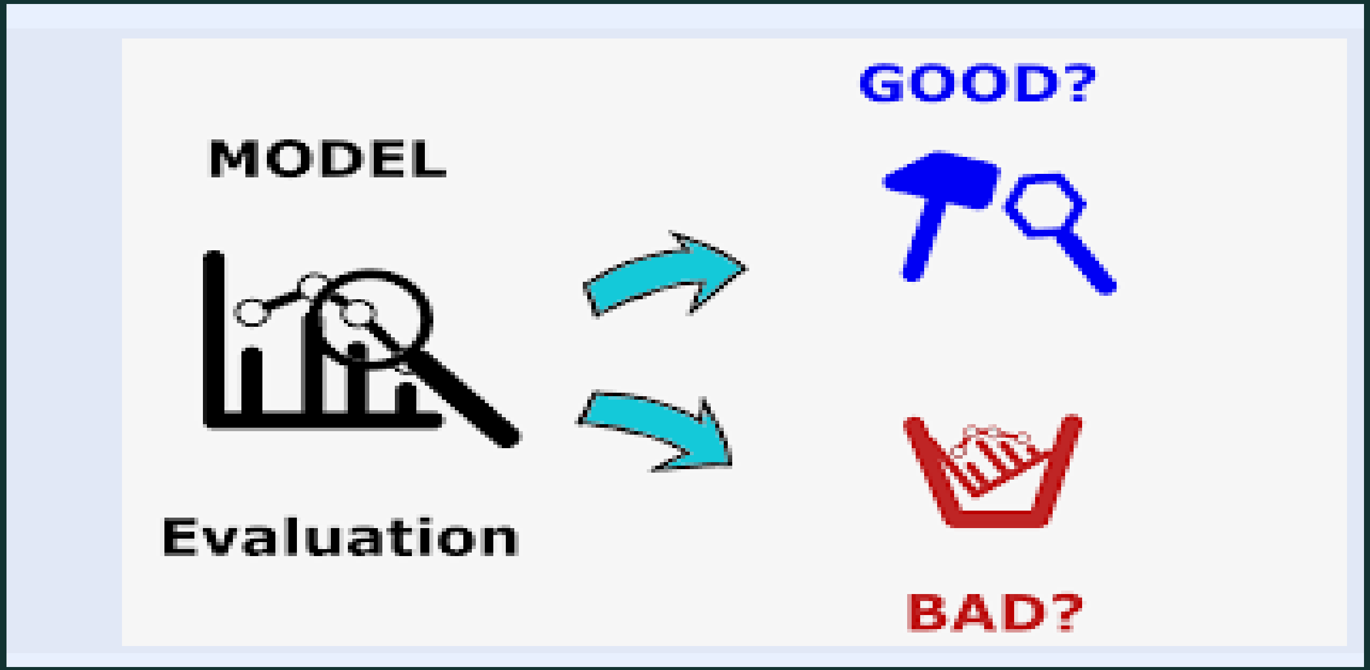
Ensemble of multiple decision trees

4

Gradient Boosting

Advanced sequential ensemble method

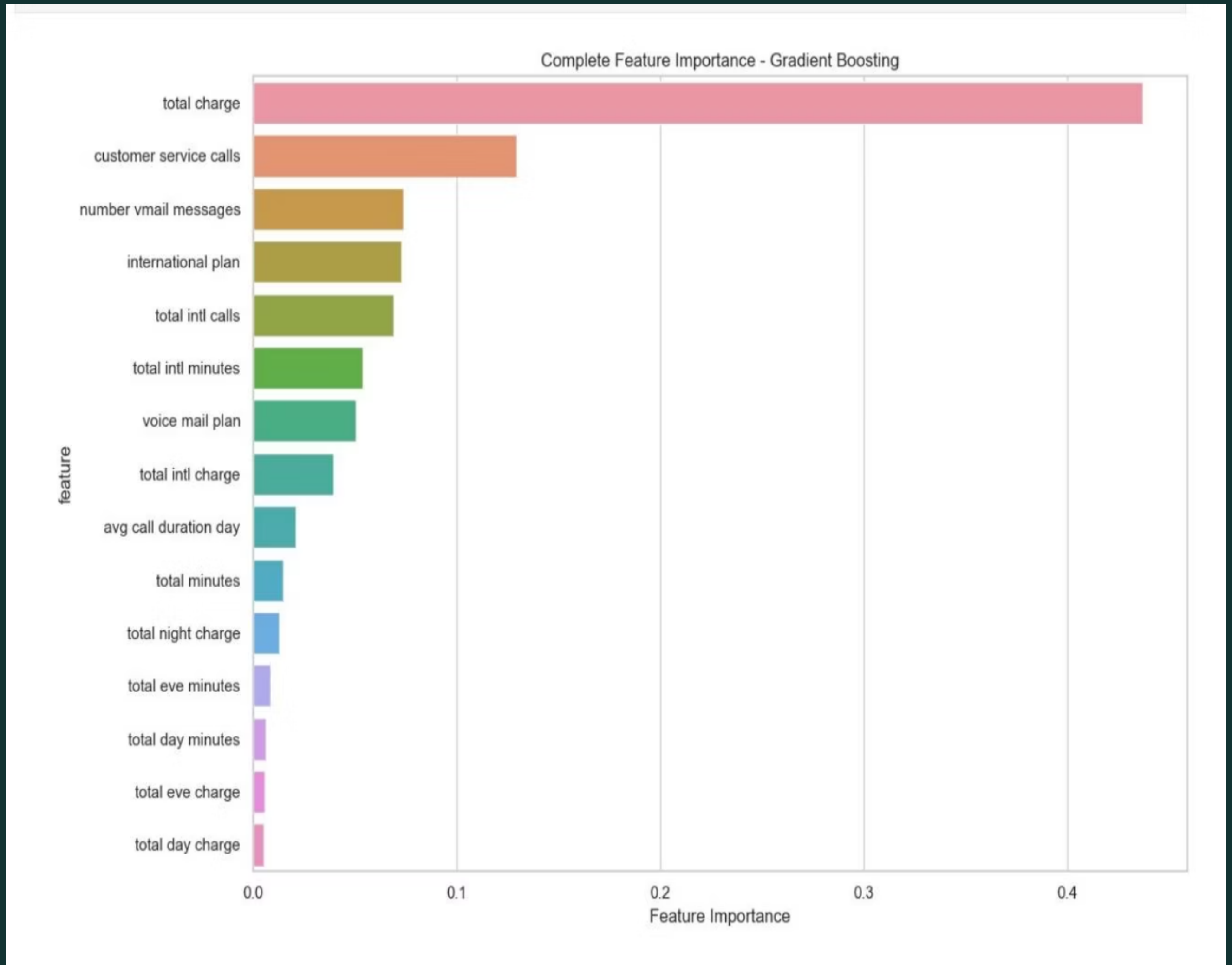
Model Evaluation



Gradient boosting emerged as our best model with:

- 97.3% overall accuracy
- 100% precision – every customer flagged as "high risk" actually churned
- 81.4% recall – identified over 4 out of 5 customers who would churn

What Drives Customer Churn?



Top 3 Churn Predictors:

1. Total Charges (45%)

   Customers with higher bills are most likely to leave

2. Customer Service Calls (12%)

   Multiple support interactions signal dissatisfaction

3. Voicemail Usage (8%)

   Unusual voicemail patterns correlate with churn risk

Recommendations

Monitor High-Bill Customers

Establish automated alerts for customers with bills exceeding specific thresholds. Create tiered discount programs offering 10-20% reductions for high-value customers showing early warning signs.

Transform Customer Service

Train representatives to flag customers with multiple recent contacts and immediately escalate them to specialized retention teams. Every service call should be viewed as both a problem-solving opportunity and a churn prevention intervention.

Deploy Real-Time Risk Monitoring

Create a daily dashboard identifying the highest-risk customers requiring immediate attention. With 100% precision, retention teams can act with complete confidence.

Implementation Plan

1

Phase 1: Immediate Wins (30 Days)

Target the high-risk customers identified by the model with personalized retention campaigns focusing on billing adjustments and service issue resolution.

2

Phase 2: Systematic Prevention (90 Days)

Implement automated monitoring systems for the top three churn drivers to catch customers transitioning from low-risk to medium-risk status.

3

Phase 3: Competitive Advantage (180 Days)

Develop predictive customer lifetime value models using churn predictions to optimize acquisition spending and retention investment.

Thank you! Questions?