

Churn Prediction in Telecommunications using Machine Learning

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► Project Overview

✓ Objective:

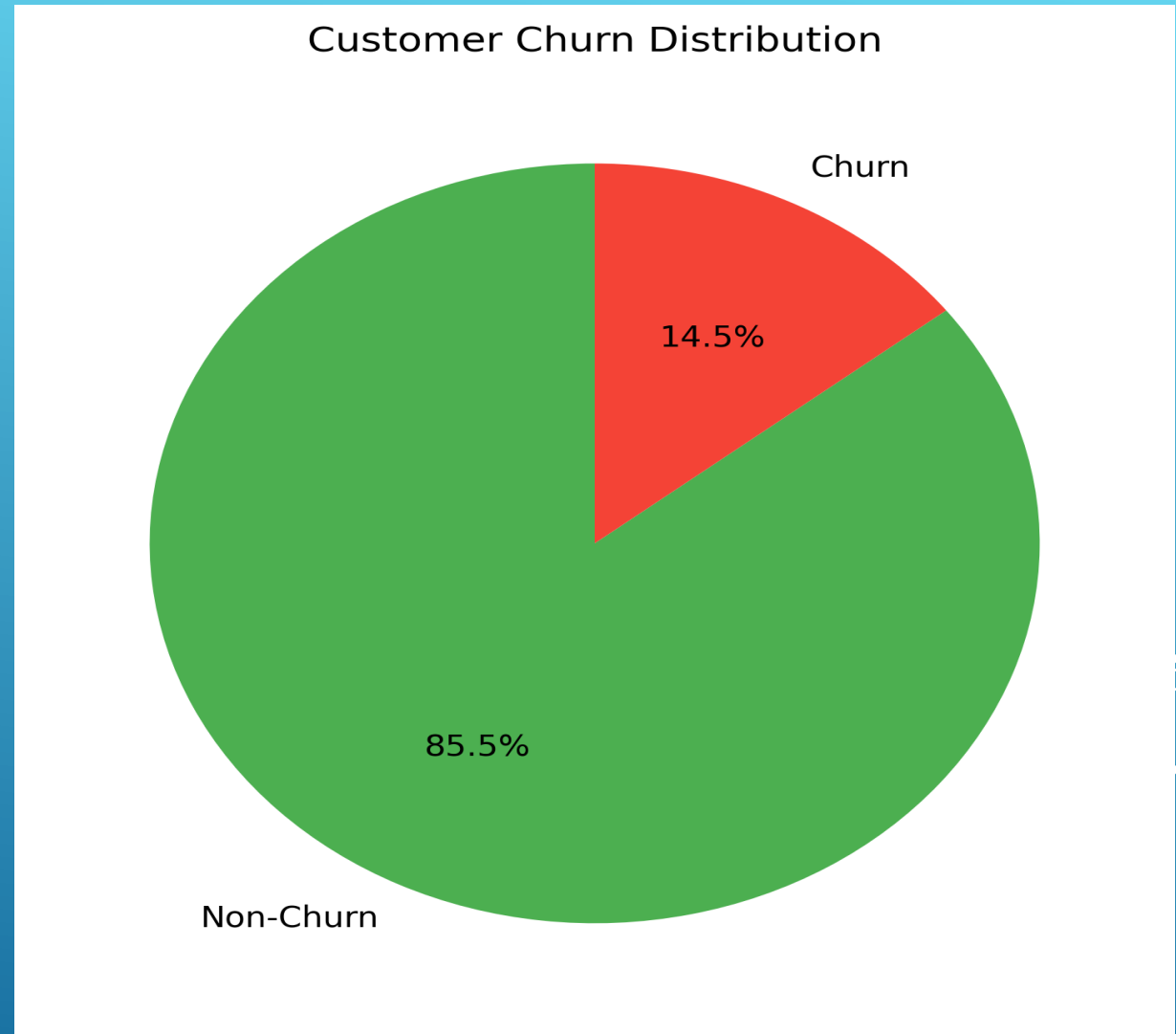
Identify customers likely to leave our telecom service so we can retain them.

✓ Why it matters:

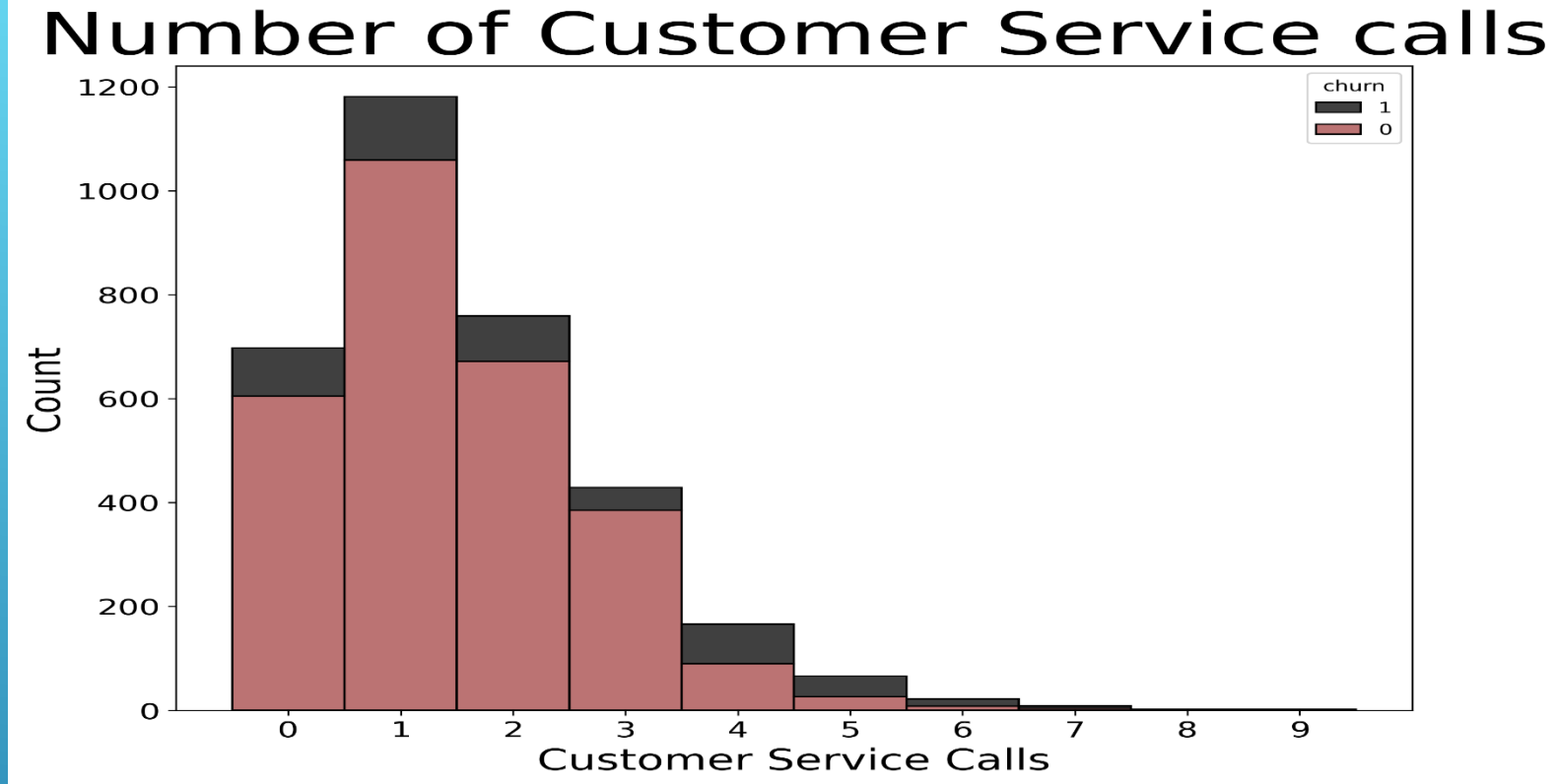
Losing customers reduces revenue and increases the cost of acquiring new ones.

Business Context & Data

- ✓ Retaining customers is critical for profitability.
- ✓ We analyzed customer account details, service usage, monthly charges, service subscriptions, and interactions with customer support
- ✓ About 15% of customers have already left, showing the need for proactive retention strategies.



Why Predict Churn?



- Goal: Predict which customers are at risk before they leave.
- Benefit: Allows targeted retention actions, such as personalized offers, improving loyalty and revenue.
- Think of it as a “risk score” for each customer.

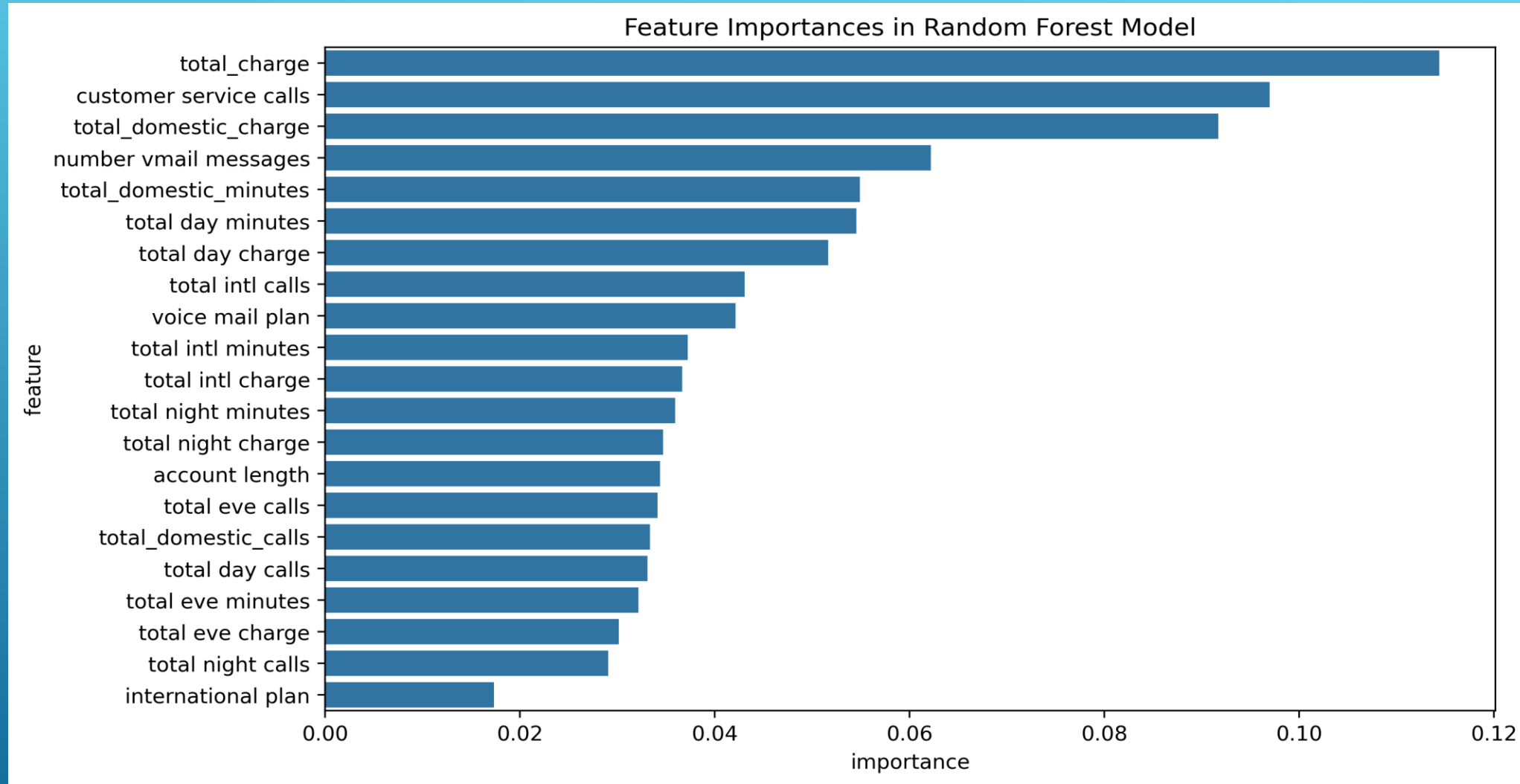
Model Results

Model	Ability to Identify At-Risk Customers
Logistic Regression	5 out of 10 churners correctly identified
Decision Tree	8 out of 10 churners correctly identified
Random Forest	8–9 out of 10 churners correctly identified


✓ Random Forest Is our best model which identifies **most customers likely to leave**, helping the company act early.

Key Drivers of Churn


- High total charges
- Frequent calls to customer service
- Service usage



Business Recommendations

1. **Focus on high-spending customers and frequent support callers:** Offer personalized retention deals.
 2. **Encourage value-added services:** Promote voicemail or international plans to strengthen loyalty.
 3. **Improve customer support:** Proactively resolve issues for at-risk customers.
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Next Steps

- ✓ Integrate risk prediction into customer management systems.
 - ✓ Monitor and update the model regularly with new data.
 - ✓ Run targeted campaigns for customers identified as high risk.
 - ✓ Explore additional approaches to improve prediction accuracy.
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Thank You

Contact

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