

Protecting Our Market Leadership by Proactively Reducing Customer Churn

A Data-Driven Analysis and Predictive Model to Retain
Our Valued Customers.

This presentation outlines a data-backed strategy to understand, predict, and combat customer churn, securing Syriatel's revenue and market position.

Syriatel is a Market Leader, But a Rise in Customer Churn Threatens Our Growth



6 Million+ Customers

We proudly serve a majority of the market.



55% Market Share

A dominant position in the Syrian telecom industry.



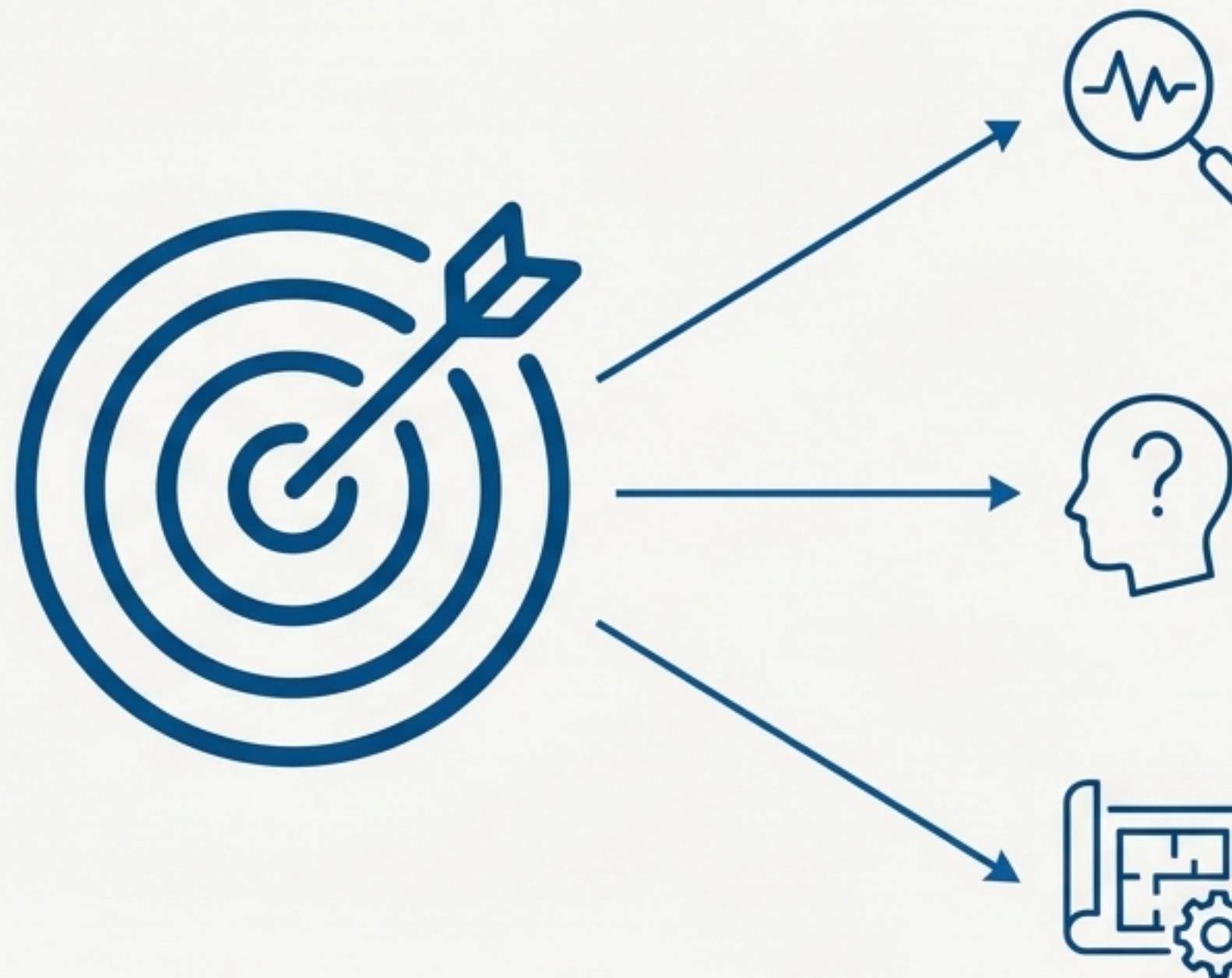
25,000+ Daily Queries

High customer engagement across our channels.

The Problem

Syriatel has observed an increase in customer churn and is concerned about the financial losses associated with customers who discontinue their services prematurely. Each lost customer impacts our growth rate and revenue.

Our Mission Was to Transform Raw Data into an Actionable Anti-Churn Strategy



Identify Early Indicators

Determine the key customer behaviors and profile features that serve as early warnings for churn.

Understand the 'Why'

Analyze and identify the underlying reasons customers choose to discontinue their service.

Build a Predictive Tool

Construct a model capable of accurately forecasting which customers are most likely to churn.

We Set Clear, Ambitious Targets to Ensure Business Value

Identify Key Features

5+

Goal: Pinpoint at least five features strongly correlated with churn.

Business Impact: Provide actionable insights for monitoring and addressing customer dissatisfaction.

Achieve High Model Accuracy

>90%

Goal: Build a model with over 90% accuracy.

Business Impact: Ensure our predictions are reliable for decision-making.

Achieve High Model Precision

>75%

Goal: Achieve a minimum of 75% precision.

Business Impact: Minimize false positives, ensuring we target the right customers and use retention resources efficiently.

Our Analysis is Built on a Foundation of 3,333 Detailed Customer Profiles

Inter

Source: Churn in Telecom's Dataset from Kaggle.

Scope: 3,333 customers, each with 21 distinct attributes.

Data Categories



Account Information: Account length, state, area code.



Service Usage: Total minutes, calls, and charges (Day, Evening, Night, International).



Plan Details: International Plan status, Voicemail Plan status.



Customer Engagement: Number of customer service calls.

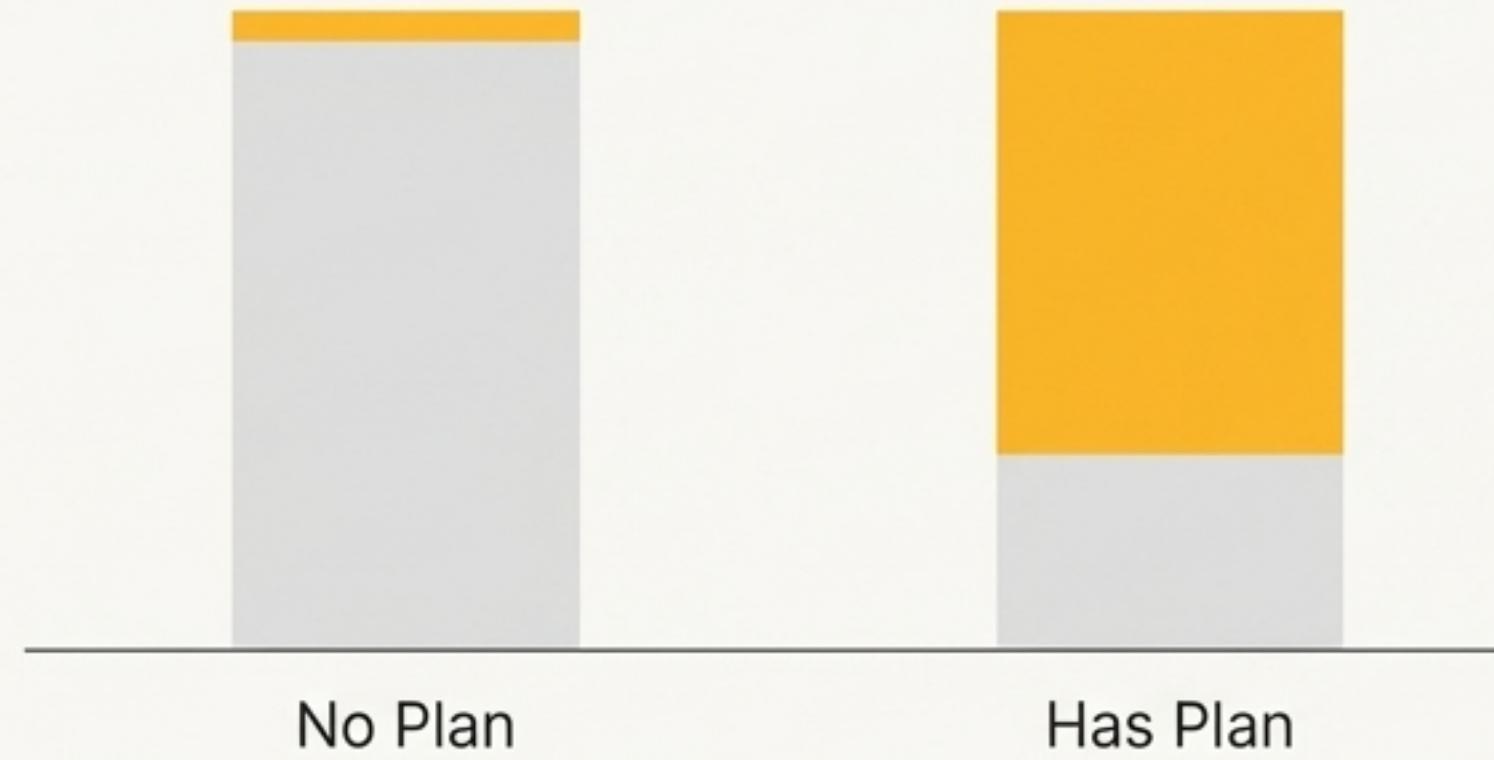


Outcome: Churn status (True/False).

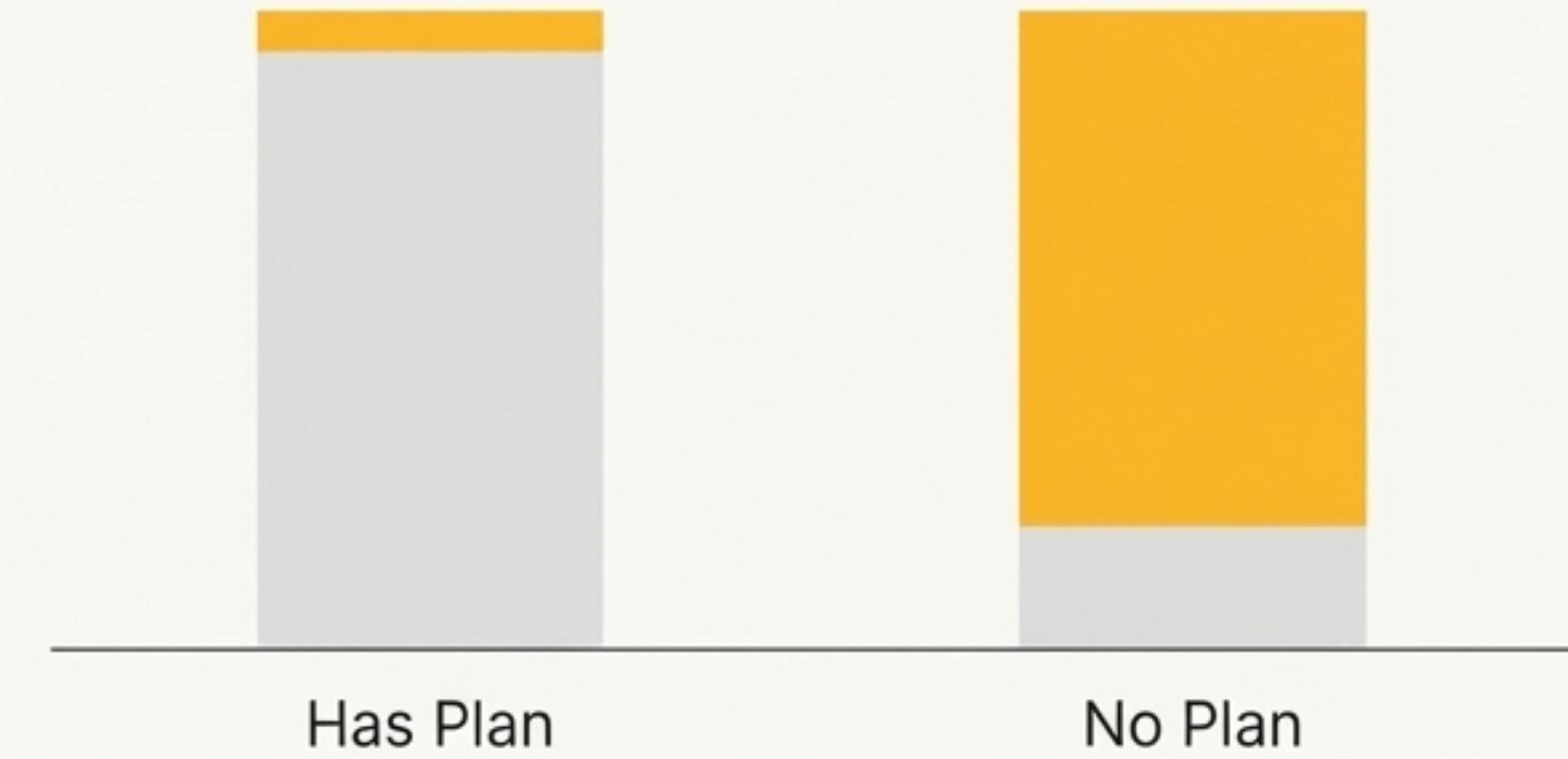
Data Quality Note: The dataset was clean, with no missing values or duplicates, providing a solid base for analysis.

Early Analysis Revealed That Customers on Specific Plans Are More Likely to Churn

Customers with an International Plan
Churn at a Higher Rate.

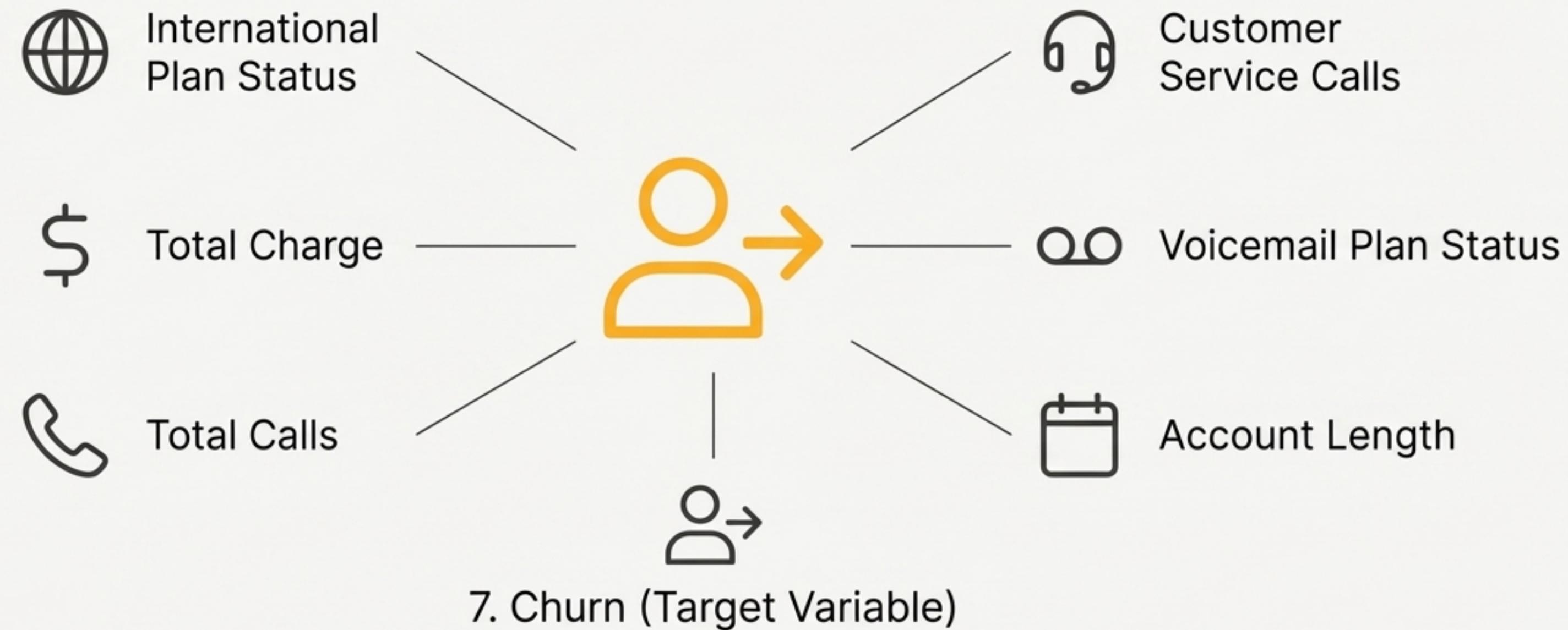


Customers *Without* a Voicemail Plan
Are More Prone to Churn.



Key Takeaway: These initial findings highlight the importance of service plan configuration in customer retention.

We Identified Seven Key Factors That Significantly Predict Customer Churn



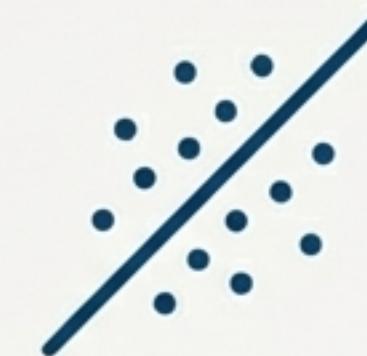
Note: These features formed the core of our predictive modeling efforts, as they showed the strongest correlation with a customer's decision to leave.

We Tested Three Different Models to Find the Most Accurate Churn Predictor



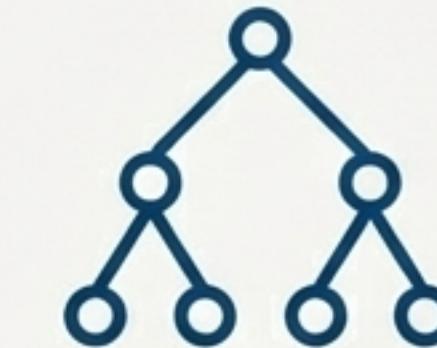
Logistic Regression (The Baseline)

A standard, reliable model that provides a strong baseline to measure performance against.



Modified Logistic Regression (The Enhanced Baseline)

An adjusted version of our baseline. We refined our approach to better identify the small but critical group of churning customers.



Decision Tree (The Challenger)

A more advanced model that can uncover complex patterns in customer behavior, making it a powerful candidate for this analysis.

The Decision Tree Model Successfully Predicts Churn with Over 91% Accuracy

Model / Classifier	Logistic Regression	Modified Logistic Regression	Decision Tree
Accuracy Score	85.1%	60.1%	91.8%
Precision	15.4%	80.4%	76.9%
Recall	44.0%	23.7%	69.2%

Exceeds our 90% accuracy success criterion.

Key Insight

While the baseline model struggled to effectively identify at-risk customers, the Decision Tree model delivered superior overall performance, providing both high accuracy and reliable precision.

Our Winning Model Provides a Reliable and Efficient Tool for Targeting At-Risk Customers



76.9%

High Precision Means Efficient Intervention

When our model flags a customer as “at-risk” of churning, we are correct more than 3 out of 4 times.

- This minimizes wasted effort on retaining happy customers, allowing our retention teams to focus their resources where they will have the most impact.



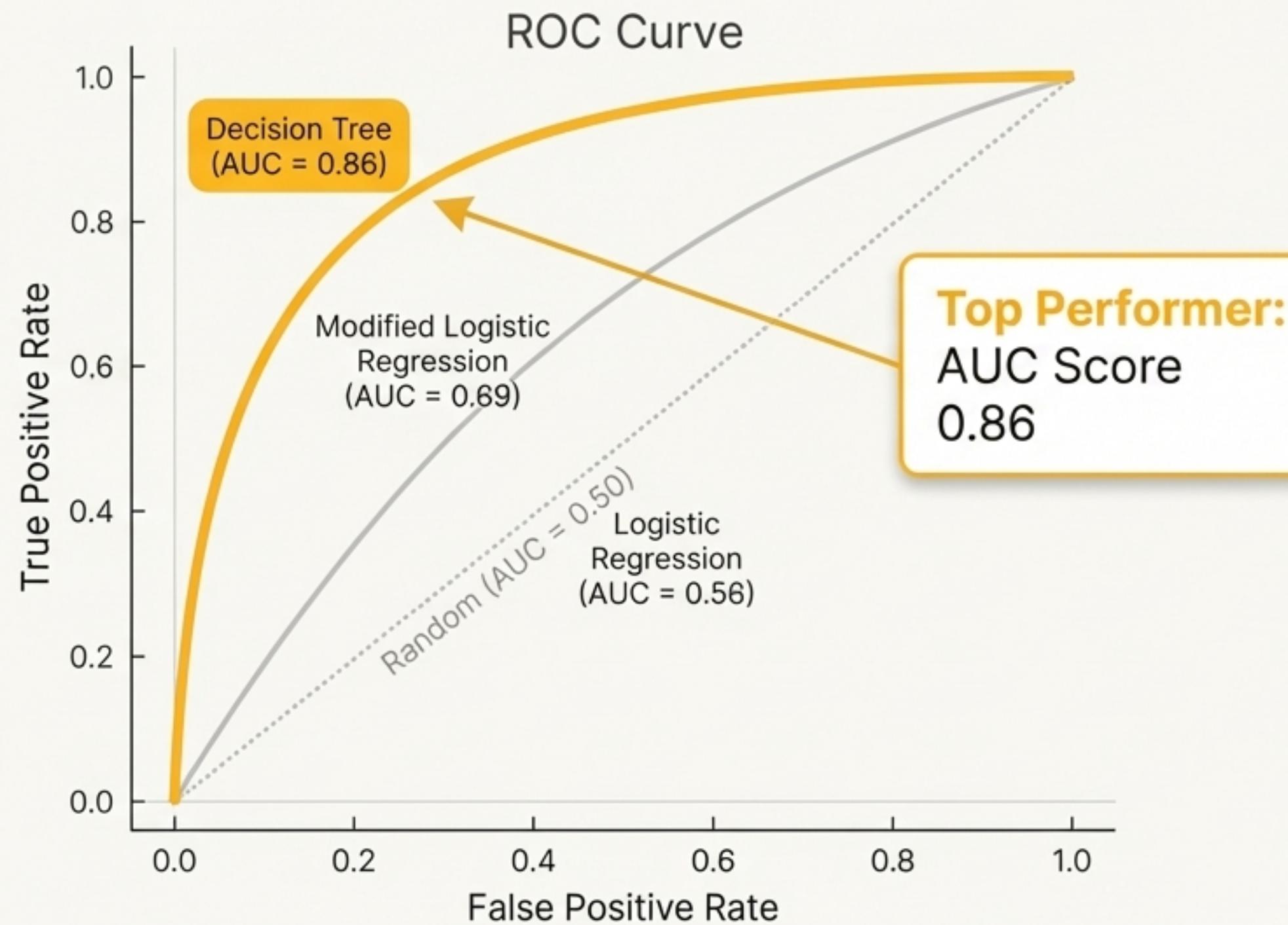
69.2%

Strong Recall Means We Don’t Miss Opportunities

The model successfully identifies nearly 70% of all customers who are actually going to leave.

- This ensures we have a chance to intervene with a large majority of at-risk customers before they make the final decision to cancel their service.

Visual Analysis Confirms the Decision Tree's Superior Ability to Distinguish Churners



How to Read This Chart

- This graph shows how well each model can separate loyal customers from those likely to churn.
- The higher the curve is to the top-left corner, the better the model's performance.
- The Decision Tree clearly outperforms all other models, demonstrating its strong predictive power.

Our Investigation Uncovered the Drivers of Churn and Created a Powerful Tool to Combat It

The Problem



Rising customer churn is impacting revenue and threatening Syriatel's market leadership.

The Key Insights



- **Service plans** (International, Voicemail) are major churn indicators.
- **High customer service call volume and total charges** are strong predictors.

The Solution



- We developed a **Decision Tree model** that predicts **churn with over 91% accuracy**.
- This tool enables **proactive, targeted retention efforts**.

We Recommend Three Strategic Actions to Reduce Churn and Protect Revenue

1

Enhance Feature Selection

Action: Go beyond usage data. Further explore customer behavior and satisfaction-related features to improve model accuracy and deepen our understanding of why customers leave.

2

Optimize Model Performance

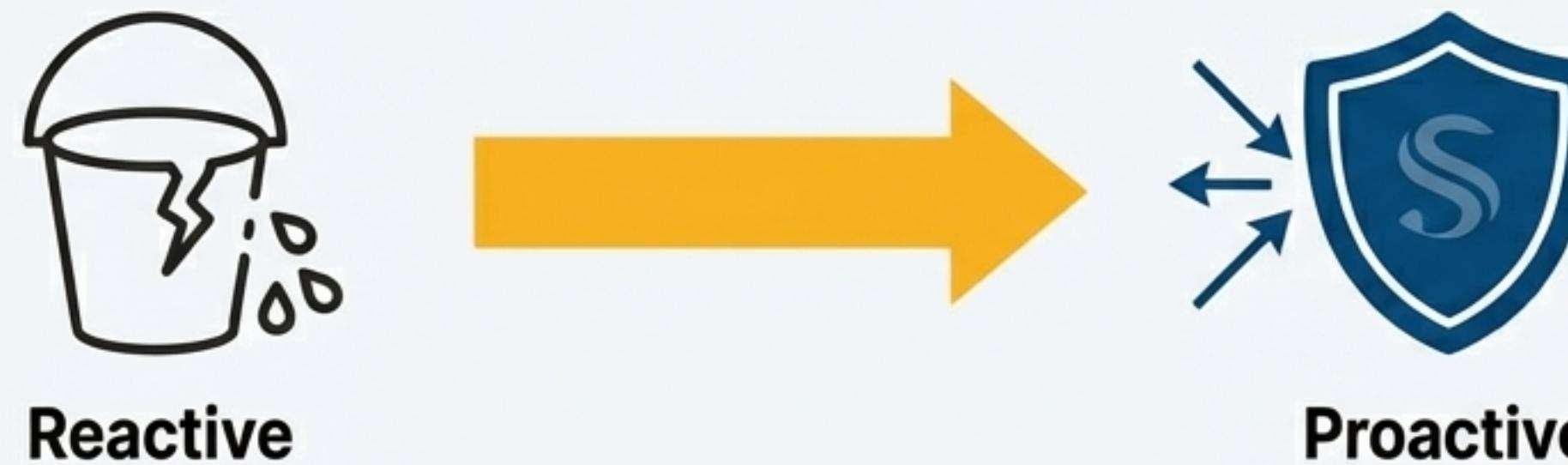
Action: Continue to fine-tune the Decision Tree model and experiment with alternative techniques to further boost its predictive power, especially in identifying the most at-risk customers.

3

Focus on Customer Retention Strategies

Action: Immediately begin using the model's predictions to implement targeted retention campaigns and personalized loyalty programs.

The Path Forward is a Shift From Reacting to Churn to Proactively Cultivating Loyalty



The predictive model is more than a report; it is an operational tool.

By integrating these insights into our marketing and customer service workflows, we can:

- **Intervene Early:** Engage at-risk customers with personalized offers before they leave.
- **Optimize Resources:** Focus retention efforts on the customers who need it most.
- **Protect Our Revenue:** Turn a significant business challenge into a competitive advantage and secure Syriatel's position as the region's leading operator.