

# Customer Churn Prediction Model

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# About Syria Tel

Founded in 2000 and headquartered in Damascus, SyriaTel is a leading mobile network provider in Syria, offering a range of communication services like voice calls, data plans, and mobile internet access. It enjoyed a dominant market share alongside MTN Syria until 2021 when MTN exited the country. This shift led to a temporary monopoly for SyriaTel, which was broken in 2022 with the introduction of Wafa Telecom as the third mobile operator. The company actively invests in network upgrades, aiming to deliver faster and more reliable connections to its customers. As Syria rebuilds and the telecommunications sector evolves, SyriaTel is expected to play a crucial role in connecting the nation and fostering economic growth.

## Problem Statement



# Problem Statement



Without access to reliable customer data and insights, the Sales and Marketing department struggles to:

- 1.Retain existing customers: High churn rates lead to lost revenue and hinder sustainable growth.
- 2.Optimize marketing campaigns: Ineffective resource allocation wastes budget andlimits campaign effectiveness.
- 3.Target the right customers: Attracting uninterested customers leads to wasted resources and further increases churn.

# Business Understanding



Syria Tel's Sales and Marketing department, led by Ziad Darwish, faces critical challenges impacting profitability. These include:

- Low conversion rates: Attracting the wrong customers leads to wasted resources and high churn (customer defection).
- Ineffective campaigns: Lack of reliable customer data hinders effective resource allocation, resulting in underwhelming campaign performance and declining return on investment (ROI).
- Limited budget: A recent budget reduction necessitates more efficient and targeted marketing strategies.



# Main Objectives

## Objective 1: Increased Profitability



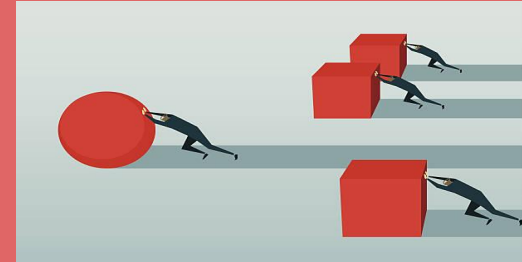
Reduced churn and optimized campaigns equals higher customer lifetime value and improved profitability.

## Objective 2: Solutions to Budget Constraints



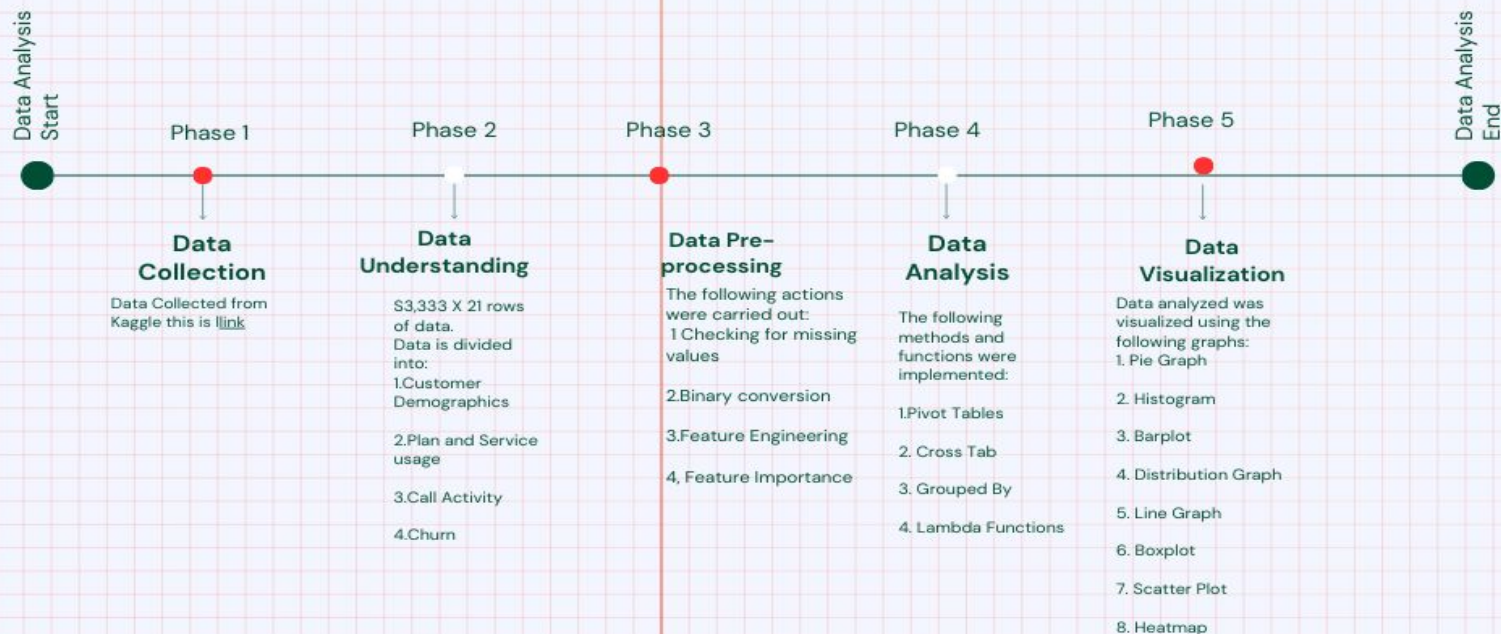
Data-driven insights will guide resource allocation which will result in effective marketing strategies, maximizing ROI even within budget constraints.

## Objective 3: Providing Competitive Advantage from Data Insights



By leveraging customer data effectively then implementing it, it provides a boost over its alternative company MTN Syria.

# Data Analysis Timeline





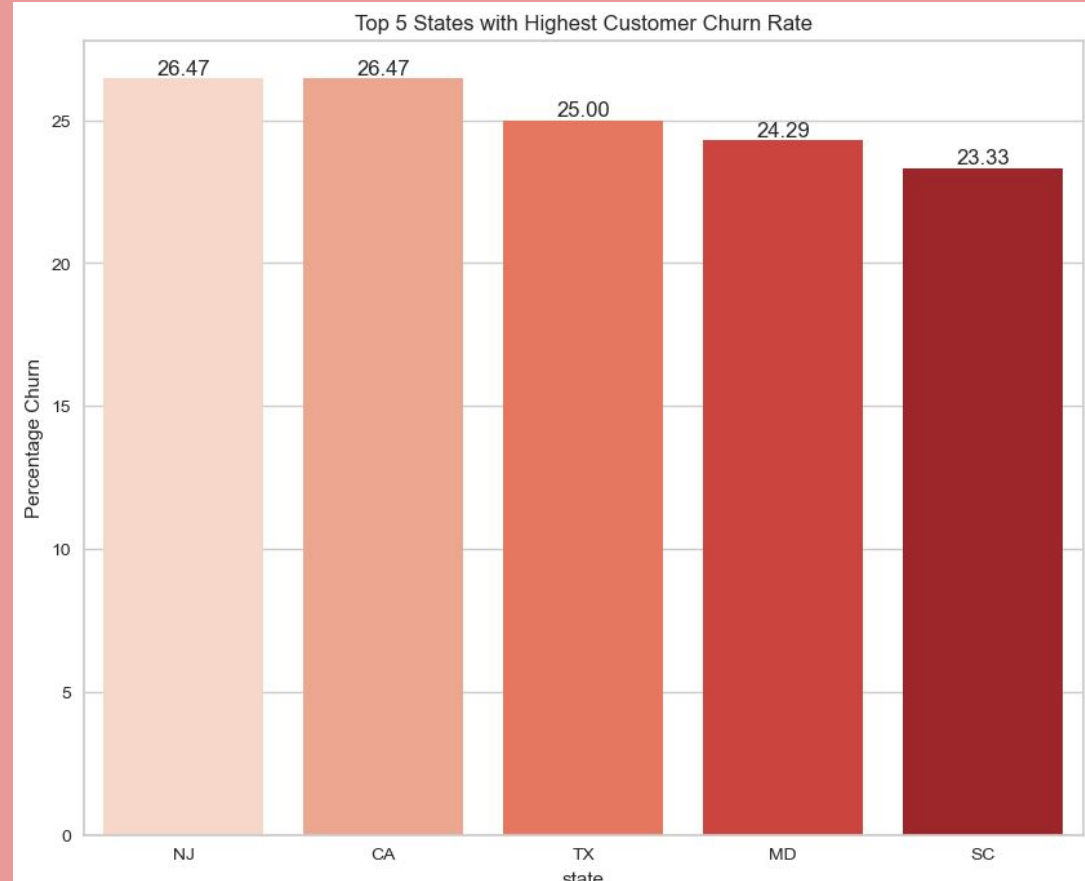
# Findings : Top 5 States with Highest Customer Churn

The following states have the highest customer churn in order:

1. NJ: New Jersey
- 2.CA: California
- 3.TX: Texas
- 4.MD: Maryland
- 5.SC: South Carolina

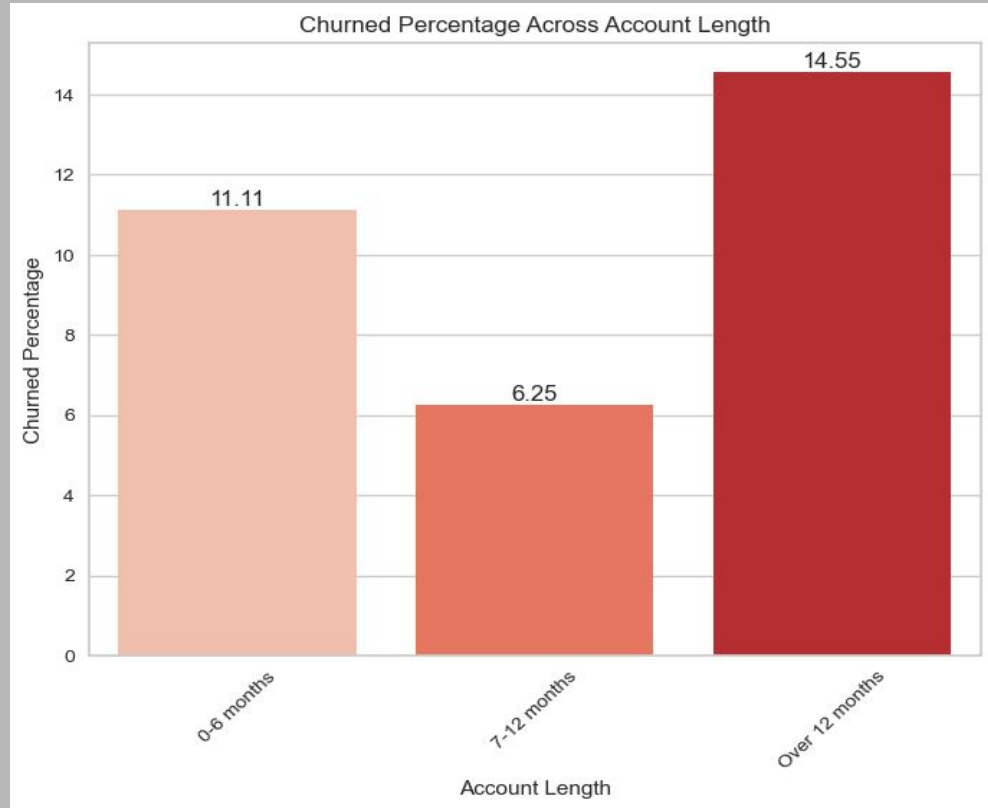
This may be due to:

1. Network Coverage: Weaker coverage in these areas might lead to service issues, prompting customers to switch providers.
2. Competitor Presence: A high concentration of competitors offering attractive plans could entice customers.



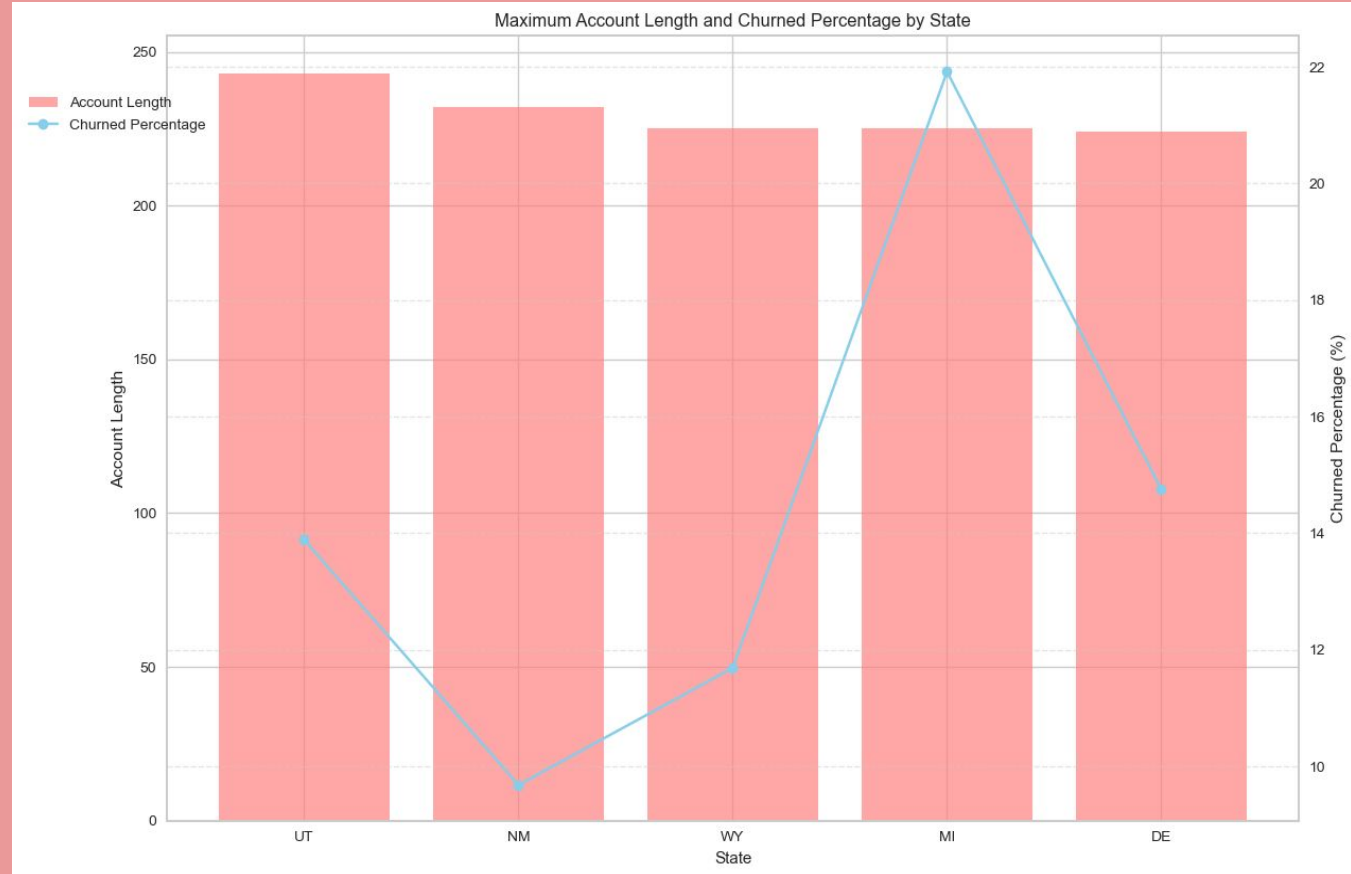
# Findings: Account Length Churn

- For new customers (0-6 months), strategies aimed at enhancing onboarding experiences, providing personalized offers, and addressing early-stage concerns could help reduce churn.
- For long-term customers (over 12 months), strategies focused on enhancing customer satisfaction, providing loyalty rewards, and proactively addressing potential issues could be effective in reducing churn rates and fostering long-term relationships.



# Findings Max Account Length with Churn Percentage

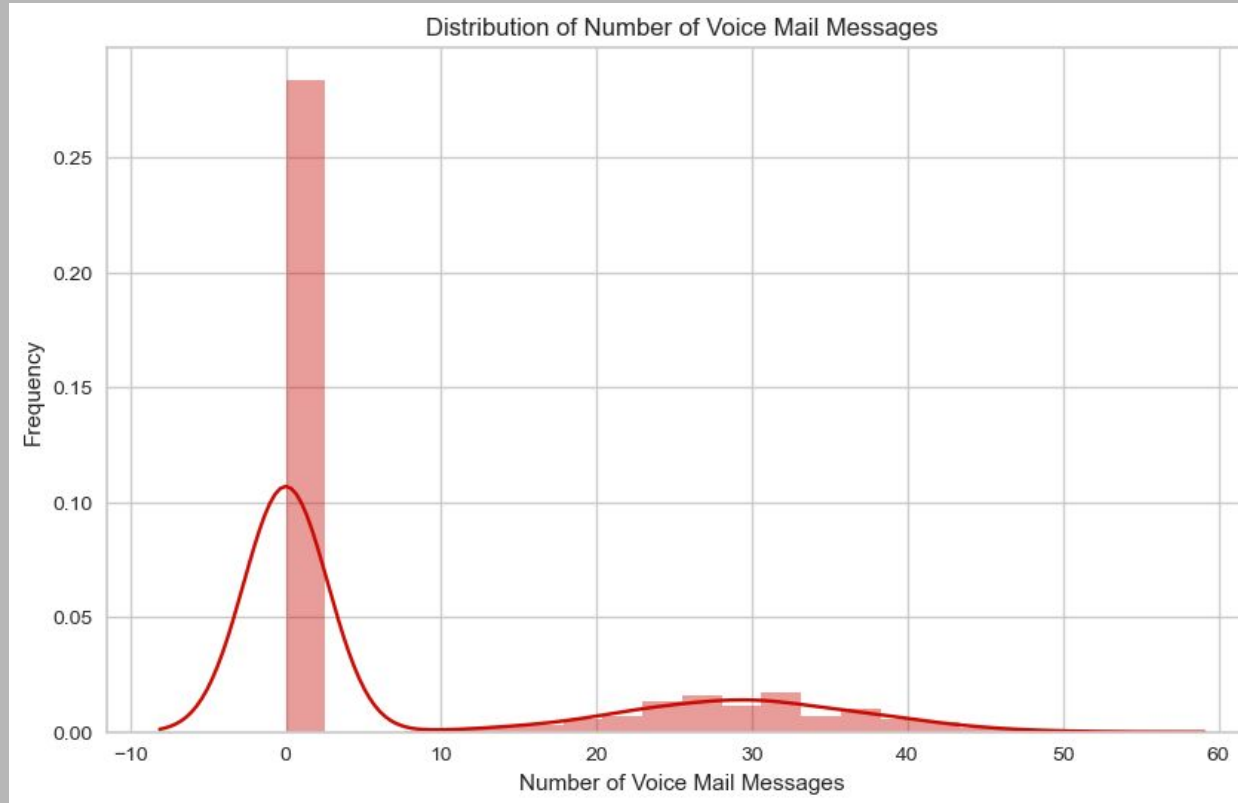
- Churn Variation: Churn percentages vary across states (10.0% - 12.33%). This suggests location plays a role in customer churn likelihood.
- High Churn States: ID, WY, MO, VT, and AL have higher churn rates compared to others. Understanding the "why" behind this variation is crucial.
- Regional Trends: The Midwest (MO), Mountain West (WY), and Northeast (VT) might exhibit higher churn rates. Investigate regional factors influencing churn.



# Findings : Distribution of Number of Voicemail Messages

The distribution of the number of voicemail messages communicates the following:

- A high frequency of customers use the voicemail plan however after leaving less than 18 voice mails the subscribers churn from the voicemail plan.
- This occur due to expiring promotions that attracted the customer initially.
- Poor voicemail quality or dissatisfaction with customer service assistance



# Modelling

The algorithms **Decision Trees** and **XGBClassifier** chosen met the following criterias necessary to create a reliable, and sensible model that will execute the task of predicting churn prone customers effectively and efficiently, the criteria were as follows:

## 1. **Easy to Understand:**

Decision Trees show clear steps together with an explanation as to why a customer might churn. This may help the sales and marketing teams identify areas to focus on and prevent churn through ad campaigns.

## 2. **Powerful and Precise:**

XGBoost is a high-performing model that can handle complex customer behavior patterns, leading to more accurate predictions.

## 3. **Actionable Insights:**

Both models pinpoint the most important factors leading to churn, in this case decision trees have an advantage due to the fact it visualizes the criteria followed using decision trees. This allows sales and marketing to prioritize efforts where they can make the biggest impact.

## 4. **Works with Imperfect Data:**

Customer data often has uneven distribution, this may cause incorrect predictions. These models can handle this issue and still provide reliable predictions.

## 5. **Fast and Scalable:**

XGBoost can quickly analyze large datasets, allowing for real-time decision making to retain customers.

A person wearing a white dress shirt and a dark tie is holding a white rectangular sign with both hands. The sign has the word "Recommendation" written on it in a black, handwritten-style font. The background is a light gray with a subtle pattern of small white dots.

Recommendation



# Recommendations

1. Proactively monitoring customers with international and voice mail plans and offering personalized promotions can encourage retention. Practical strategies for proactive monitoring and retention could include:
  - 1.1. Proactive Monitoring: Implementing systems to track customer usage patterns and engagement levels, identifying at-risk customers before they churn.
  - 1.2. Personalized Promotions: Tailoring offers and discounts based on individual customer preferences and usage history.
2. Segment-Specific Benefits: Offering customized loyalty benefits and incentives tailored to different economic segments. For example, providing discounted rates or bonus data packages to customers in lower-income brackets, while offering premium services or exclusive deals to those in higher-income brackets. Incentivized Feedback:
  - 2.1. Targeted Incentives: Offering rewards or discounts to customers who provide feedback or complete surveys.
  - 2.2. Feedback Loops: Establishing mechanisms to quickly address customer concerns and incorporate their suggestions into service improvements.
3. Flexible Pricing Structures: Introducing flexible pricing structures that accommodate varying budget constraints. This might include tiered pricing plans or pay-as-you-go options, allowing customers to choose the most suitable plan based on their financial situation.

A hand is holding a white rectangular sign in the foreground. The sign has the words "NEXT" in red and "STEPS" in black, both in a bold, sans-serif font. The background is a blurred image of a person in a blue tracksuit climbing a set of stairs, suggesting a journey or progress.

**NEXT  
STEPS**



A low cost method that can be used to reduce customer churn that is predicted by the model is conducting the following forms of feedback through Syriatels online platforms e.g email marketing.

1. Gathering feedback from customers, especially regarding international plans and pricing, is crucial for understanding their needs and preferences. Practical ideas for gathering feedback could include:
  - Surveys and Feedback Forms: Sending out regular surveys or feedback forms to customers via email or mobile app, focusing specifically on their experiences with international plans, pricing, and overall satisfaction with the service.
  -
2. Incentivized Feedback: Offering incentives, such as discounts on future bills or bonus data, to customers who complete feedback surveys. This encourages participation and provides valuable insights into areas for improvement.
3. Proactively monitoring customers with international and voice mail plans and offering personalized promotions can encourage retention. Practical strategies for proactive monitoring and retention could include:





Thank  
You