



KEEPING CUSTOMERS HAPPY

Customer churn analysis and prediction



Business Problem

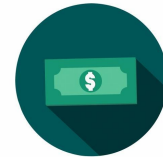
Preventing customer churn is crucial for telecommunications companies like SyriaTel due to its direct impact on profitability.

High churn rates reflect customer dissatisfaction, which not only results in lost revenue but also increases the cost associated with acquiring new customers.

Increasing customer retention rates by 5% can increase profits from 25 to 95% (Bain & Company)



Getting a new customer can cost 5 to 25 times more than keeping an existing customer (Singh R, Khan IA)



Objectives

1

Identify the key factors that determine if a customer is likely to churn

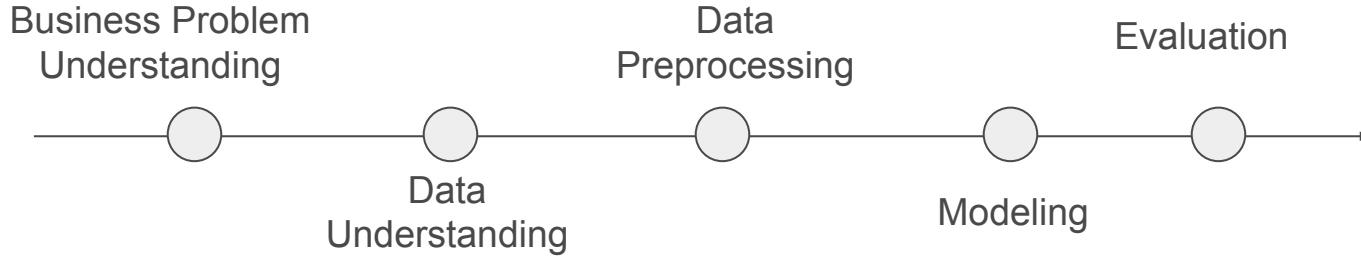
2

Develop models and determine the most effective to predict customer churn

3

Give **customer retention recommendations** to reduce churn

Steps



Data used

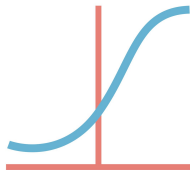
Name: Churn in Telecom's dataset

Source: [Kaggle](#)

Size: 21 columns, 3333 rows

Modeling

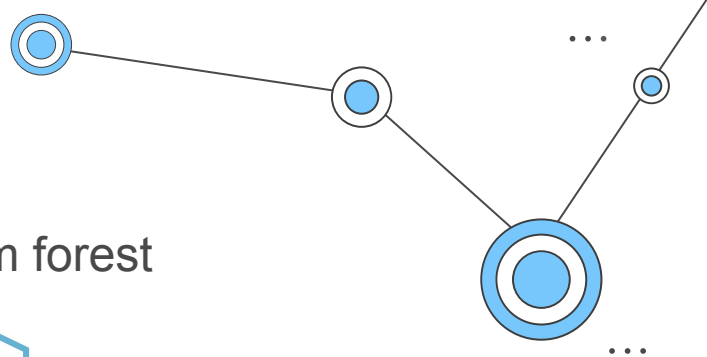
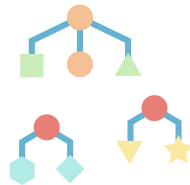
Logistic regression



Decision tree



Random forest

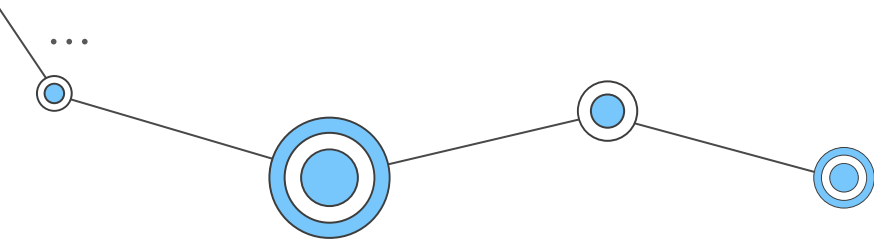


Evaluation Metrics

Main - Recall

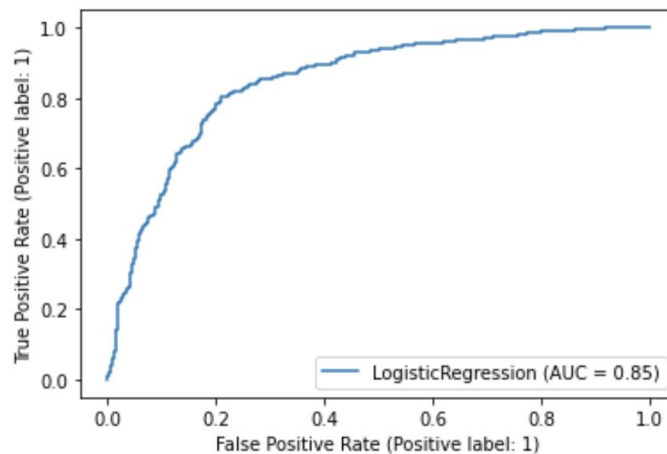
F1 Score

ROC-AUC



Best Model – Logistic Regression

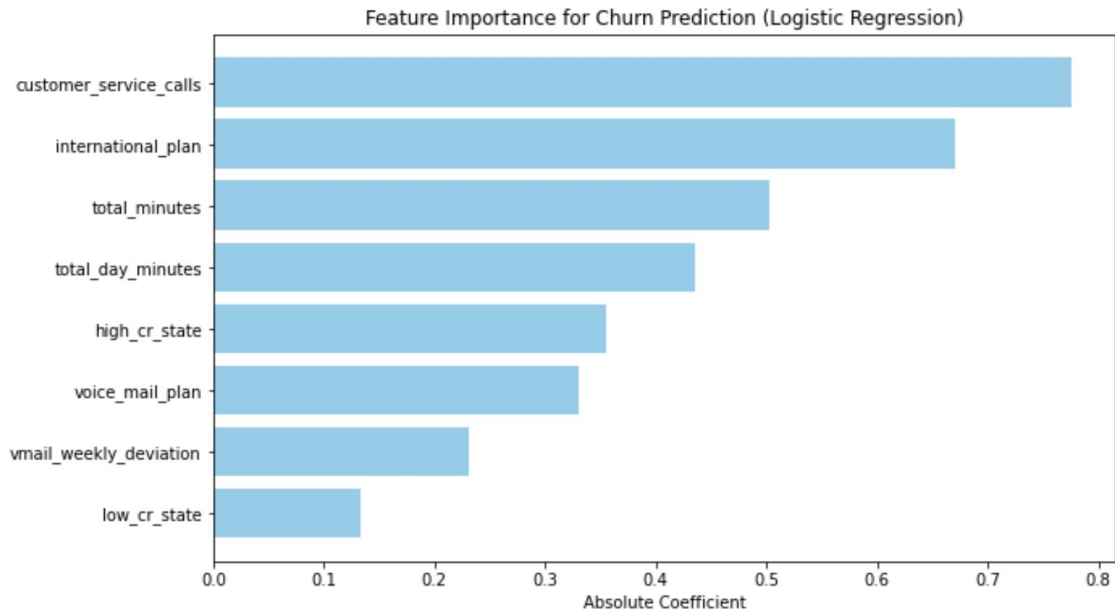
	precision	recall	f1-score	support
0	0.81	0.78	0.79	585
1	0.78	0.81	0.79	555
accuracy			0.79	1140
macro avg	0.79	0.79	0.79	1140
weighted avg	0.79	0.79	0.79	1140



Models comparison

	Recall	F1	Accuracy	AUC
Logistic Regression	0.81	0.79	0.79	0.85
Decision Tree	0.76	0.77	0.93	0.86
Random Forest	0.42	0.57	0.88	0.87

Features



Recommendations

Customer service calls:

- Develop AI enhanced **support assistant**
- developing support materials that customers can easily access: short illustrated instructions, **video materials, FAQ portal**, automated service status check.
- **Proactively survey - identify issue - solve**

International plan:

- **Differentiate the international plan** by offering lower rates per minute or additional benefits such as free international texts or reduced rates for calls to popular destinations.
- Develop **tailored international plans** with tiered pricing based on location, eg 30 discounted minutes per month to a country of choice.

Recommendations

Total charges and total day minutes:

- Introduce more **flexible pricing plans** - choosing or customizing their peak hours according to usage patterns.
- **Reduce day time** minutes cost
- Give **discounts for customer loyalty** to prevent customers churning to competitors with time.

High churn rate states:

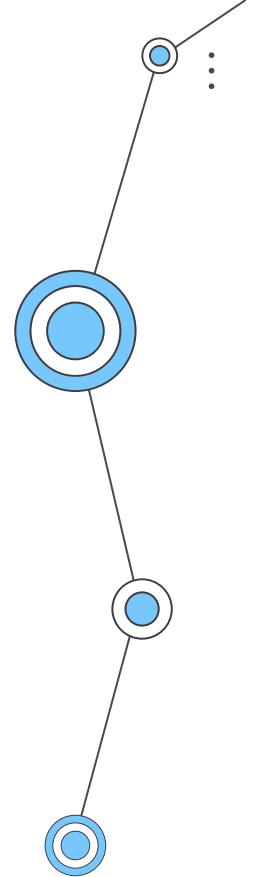
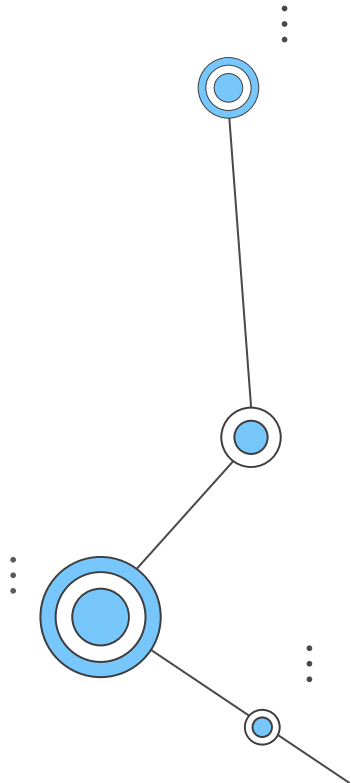
- **Infrastructure Improvements:** prioritize upgrading infrastructure in these states to improve service quality and customer satisfaction.
- **Market Research:** Invest into local market research. **Investigate all competitors** locally, their promotions, rate and retention strategies. Analyze how company compares to competitors and try to **enhance value proposition**.

Next Steps Ideas

Introduce new features for analysis,
including Internet data usage and data
services

Include qualitative analysis for a deeper
dive into customer feedback

Introduce new features for analysis,
including data usage and data services



A decorative network diagram consisting of several blue circular nodes of varying sizes connected by thin black lines. The nodes are arranged in a non-linear fashion, with some having multiple connections. The nodes are primarily located in the top right and bottom left corners of the slide, framing the central text area. Some nodes are simple blue circles, while others are concentric circles with a white center.

Thank you

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