



Telecom Churn Prediction Case Studies

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Brief Overview of the Telecom Industry and the Challenge of Customer Churn

The telecom industry is highly competitive, with customers having multiple service providers to choose from.

One of the biggest challenges faced by telecom companies is customer churn, which refers to customers switching from one operator to another.

Customer churn can lead to revenue loss and increased costs, making customer retention crucial for telecom companies.

Acquiring new customers is costly, typically 5-10 times more expensive than retaining existing customers.

Retaining high-profitable customers is particularly important for incumbent operators.

Customer retention is equally, if not more, important than customer acquisition for telecom companies.

Retained customers are more likely to generate recurring revenue and contribute to long-term profitability.

Customer retention is more cost-effective compared to acquiring new customers, which involves marketing expenses and promotional costs.

Prioritizing customer retention involves strategies to enhance customer satisfaction, loyalty, and reduce churn.

By focusing on customer retention, telecom companies can reduce revenue leakage and improve overall business performance.

Explanation of the Dataset Used in the Project

The dataset used in this project is customerlevel data from a leading telecom firm.

It contains information about individual customers and their interactions with the telecom services.

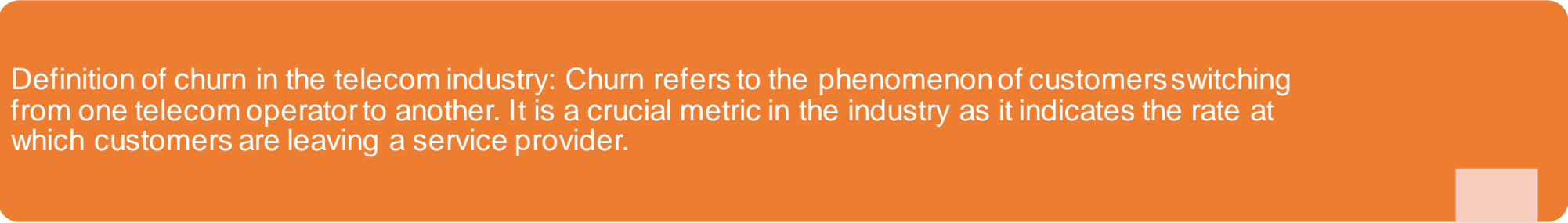
The dataset includes a variety of variables that capture customer behavior, usage patterns, and demographics.

These variables provide valuable insights into customer preferences, engagement, and potential indicators of churn.

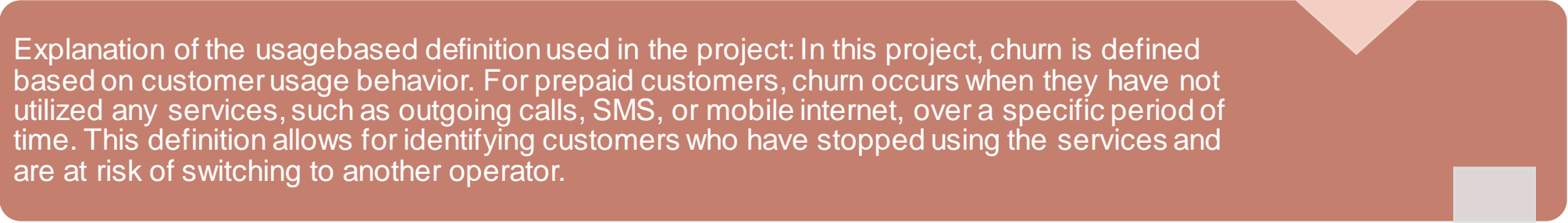
By analyzing this dataset, we can uncover patterns and trends that help predict which customers are at high risk of churn.

Churn Definition

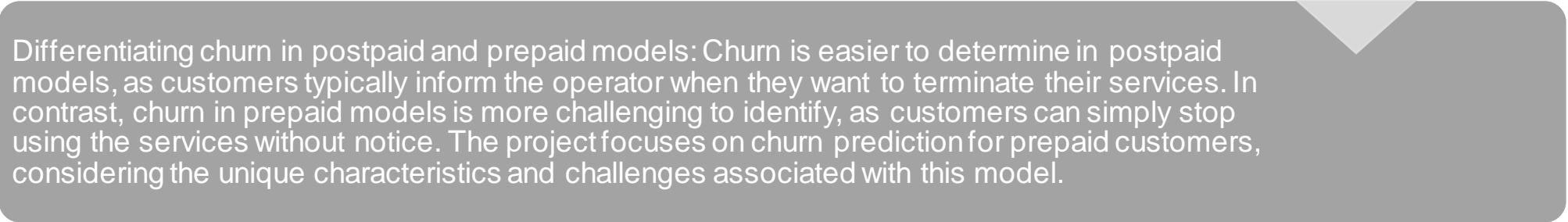
Definition of churn in the telecom industry: Churn refers to the phenomenon of customers switching from one telecom operator to another. It is a crucial metric in the industry as it indicates the rate at which customers are leaving a service provider.

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Explanation of the usage-based definition used in the project: In this project, churn is defined based on customer usage behavior. For prepaid customers, churn occurs when they have not utilized any services, such as outgoing calls, SMS, or mobile internet, over a specific period of time. This definition allows for identifying customers who have stopped using the services and are at risk of switching to another operator.

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Differentiating churn in postpaid and prepaid models: Churn is easier to determine in postpaid models, as customers typically inform the operator when they want to terminate their services. In contrast, churn in prepaid models is more challenging to identify, as customers can simply stop using the services without notice. The project focuses on churn prediction for prepaid customers, considering the unique characteristics and challenges associated with this model.

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Project Goals

Objectives: Analyze telecom customer data, predict churn, and derive business insights.

Analysis: Comprehensive data analysis to understand customer behavior and preferences.

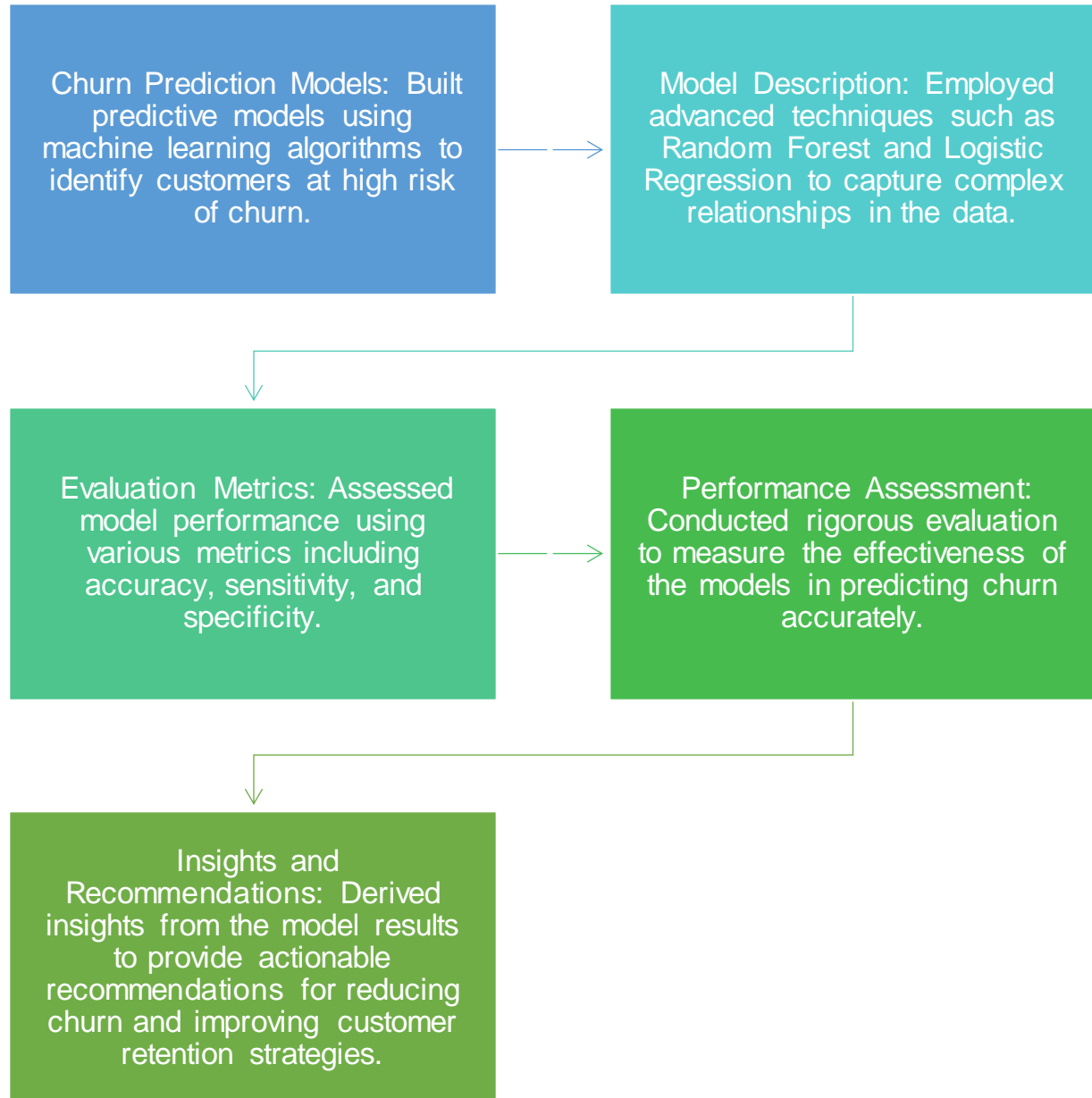
Prediction: Develop models to forecast customer churn and identify highrisk customers.

Insights: Provide actionable insights to reduce churn rates and improve customer retention.

Data Preprocessing: Clean, handle missing values, remove duplicates, and standardize data formats.

Feature Engineering: Transform raw data into meaningful features to enhance model performance.

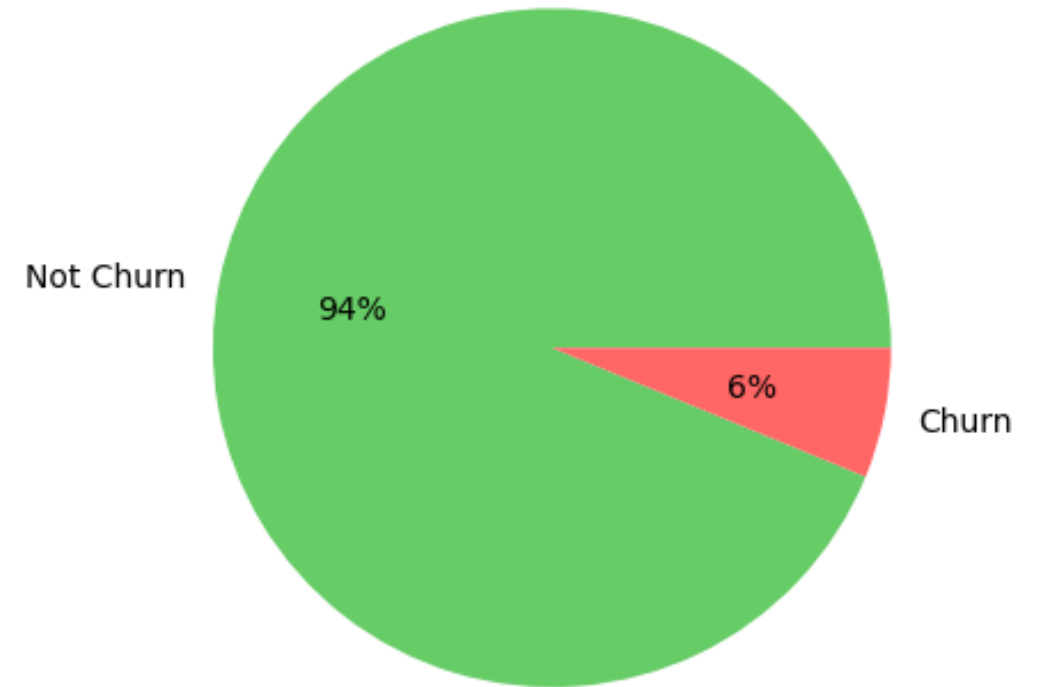
Churn Prediction Models



Results and Insights

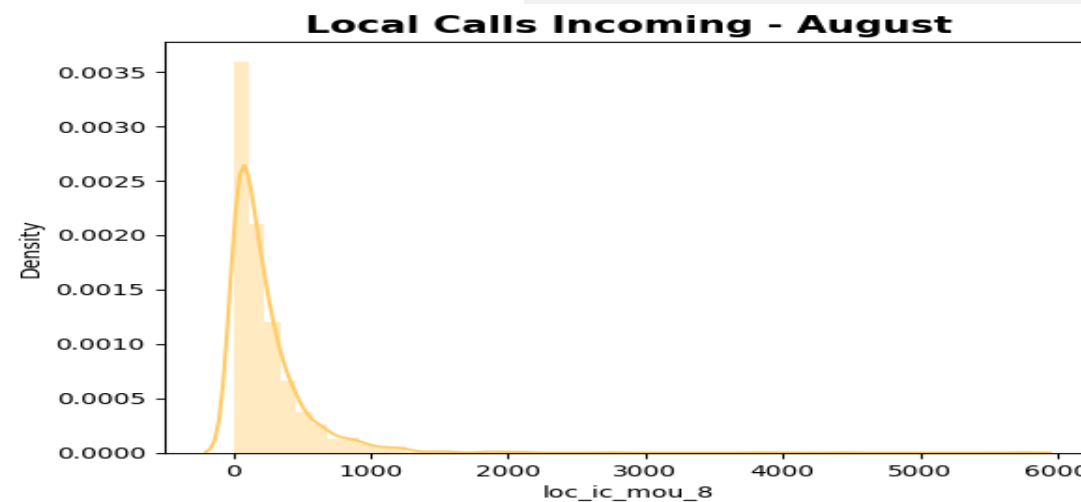
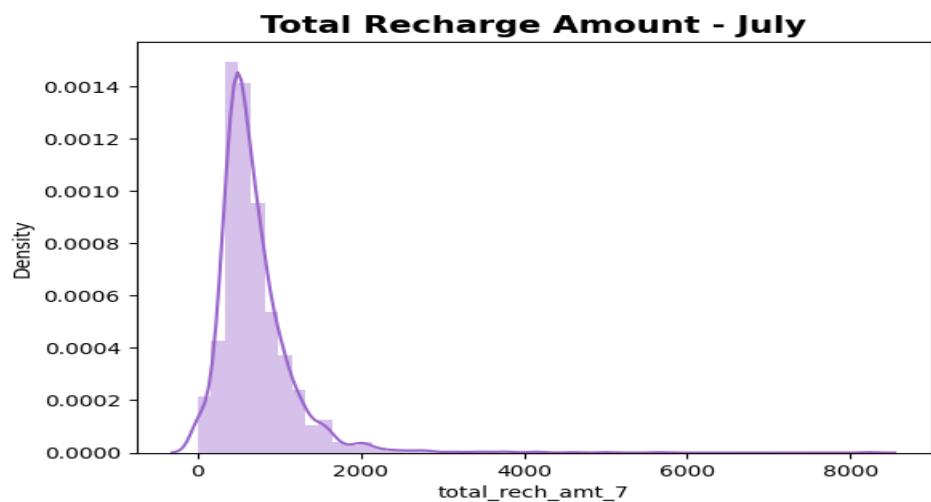
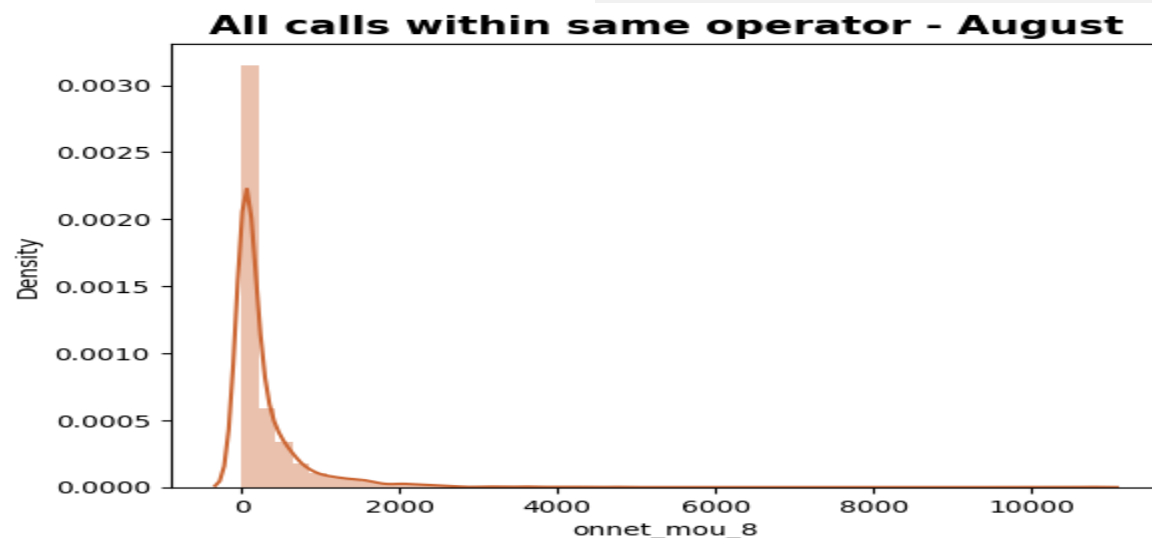
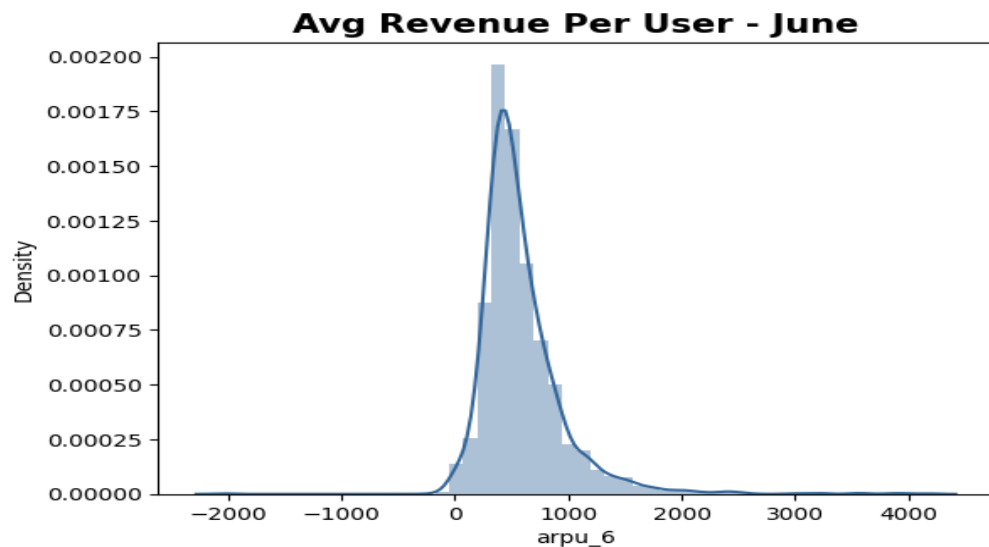
TOTAL CUSTOMER CHURN
DETAILS

Churn vs Not Churn



Results and Insights

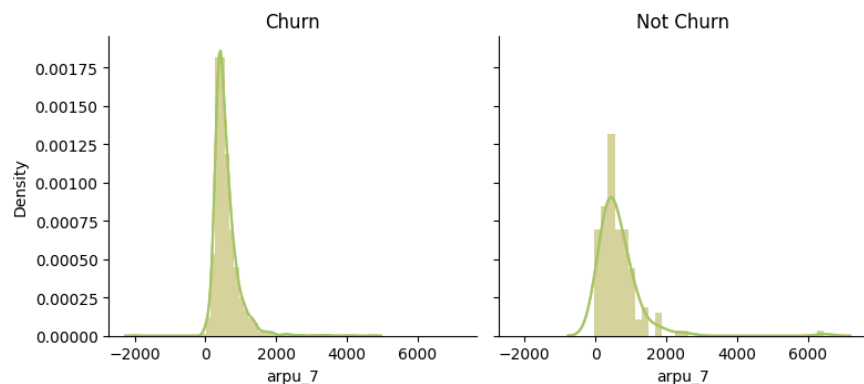
CUSTOMER INSIGHTS



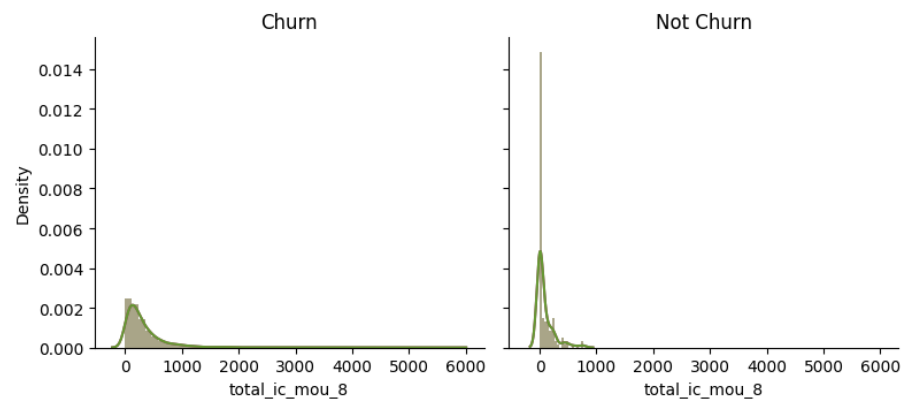
Results and Insights

- Several factors compared with Churn

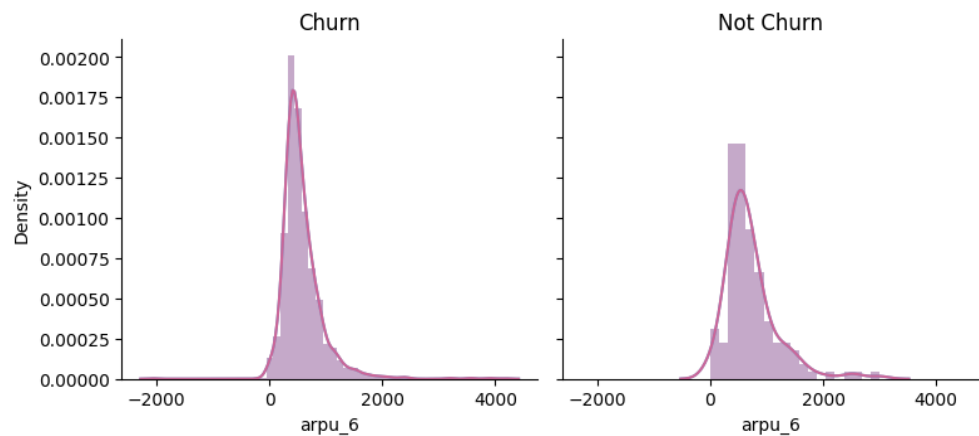
Average Revenue Per User (July) vs Churn



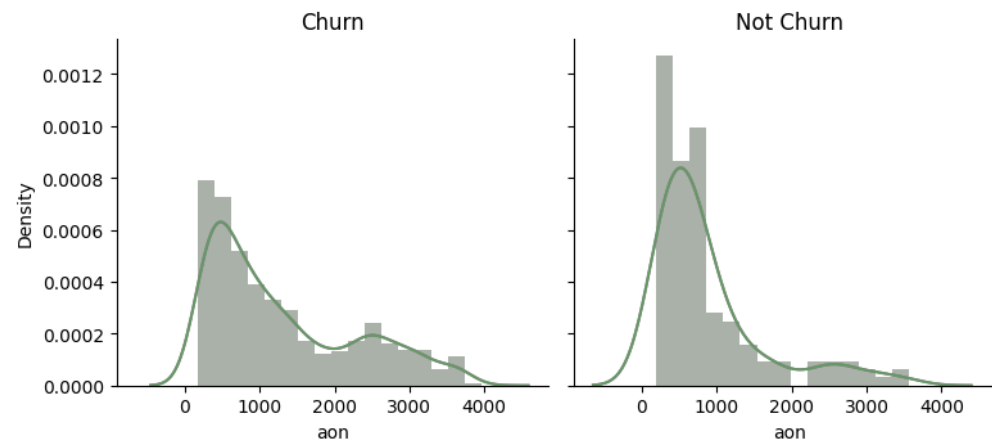
Total Incoming Calls - August vs Churn



Average Revenue Per User (June) vs Churn



Age on Network vs Churn



Business Recommendations

Offer personalized STD calling plans: Leverage the insight that customers making more STD outgoing calls in August tend to have higher value or engagement. Create targeted STD calling plans or special promotions during this period to encourage customer engagement and reduce churn.

Enhance STD incoming call experience: Focus on enhancing the customer experience for STD incoming calls, as customers receiving more STD incoming calls in July tend to have higher value or engagement. Provide better call quality, reliable connections, and attractive STD incoming call packages to retain these high-value customers.

Provide special roaming offers: Since customers making more outgoing calls while roaming in July tend to be more valuable, consider providing special roaming offers, affordable international calling rates, or tailored packages. This strategy will cater to the needs of customers who frequently travel and help retain them.

Diversify calling patterns and services: Investigate ways to encourage customers to diversify their calling patterns or explore other services within your business. This will increase customer engagement and reduce the likelihood of churn among high-value customers who may be solely relying on a specific service.

Improve value proposition for STD calls to fixed lines: Analyze strategies to improve the value proposition for customers making STD calls to fixed lines in August. Consider offering bundled packages or discounted rates for these types of calls to incentivize high-value customers to continue using these services.

Business Recommendations

Offer attractive ISD incoming call plans: Since customers receiving more ISD incoming calls in July tend to have higher value or engagement, consider offering attractive ISD incoming call plans, competitive international calling rates, or promotions. This will cater to the needs of customers with international connections and encourage them to stay.

Enhance local outgoing call offerings to other operator mobiles: Implement strategies to improve the attractiveness of your local outgoing call offerings to customers using other operator mobiles in July. This could include competitive pricing, value-added services, or targeted marketing campaigns to retain high-value customers.

Customize special outgoing call packages: Evaluate the nature and purpose of special outgoing calls and identify ways to enhance their value or relevance for customers. Introduce customized special call packages, exclusive features, or discounts to encourage high-value customers to make more of these special outgoing calls.

Promote higher-speed data services: Analyze the trend of customers opting for 2G sachet recharges in July, which suggests lower value or engagement. Promote higher-speed data services and encourage customers to upgrade to more advanced data plans to retain high-value customers who require faster data speeds.

Provide exceptional customer service: Regardless of the specific insights, delivering exceptional customer service is crucial for retaining high-value customers. Focus on personalized interactions, prompt issue resolution, and proactive communication to build strong relationships and loyalty.

Conclusion

Churn prediction is a vital process for telecom companies to identify and retain their most valuable customers.

By using data analytics and machine learning techniques, telecom companies can analyze customer behavior, preferences, and needs, and segment them into different groups based on their churn risk.

This enables telecom companies to design and implement personalized and targeted retention strategies, such as offering incentives, improving service quality, enhancing customer satisfaction, and increasing customer loyalty.

We have provided quite a few insights and advice which can help telecom company to retain high value customers and have better profits

Churn prediction can help telecom companies reduce customer attrition, increase revenue, and gain a competitive edge in the market.