



CUSTOMER CHURN ANALYSIS FOR AIRTEL SOLUTIONS

UNCOVERING KEY INSIGHTS TO BOOST
RETENTION

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CHURNQUEST: NAVIGATING THE WAVES OF CUSTOMER RETENTION IN TELECOMMUNICATIONS

Background

Airtel, a leading telecommunications company, is facing a concerning rise in customer churn. This trend poses risks to revenue and market share, prompting management to seek actionable insights. As a data analyst, your mission is to explore customer data, uncover churn patterns, and provide data-driven recommendations to enhance retention.

Problem Statement

The core challenge is to identify key factors driving customer churn at Airtel. By understanding why customers are leaving, the company can implement strategic interventions to retain customers and reduce churn rates.



METHODOLOGY AND DATA OVERVIEW

Methodology

- Data Exploration: Conducted initial data cleaning and exploratory analysis to understand the dataset.
- Segmentation Analysis: Identified customer groups based on demographics, usage patterns, and service plans.
- Churn Drivers Analysis: Analyzed various factors like account length, service usage, and customer interactions to detect churn patterns.
- Correlation and Cluster Analysis: Explored relationships and clusters in customer behavior to uncover actionable insights.

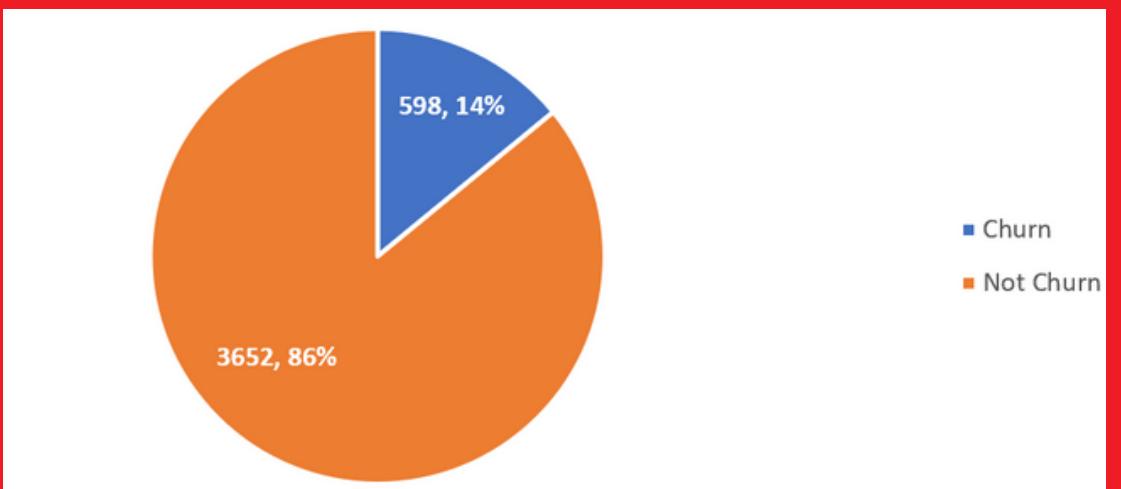
Data Overview

- Dataset Size: 4,250 customers.
- Key Features:
 - Demographics: Area codes, account length.
 - Service Plans: Voice mail and international plans.
 - Usage Patterns: Total day, evening, night, and international calls/minutes.
 - Interactions: Customer service calls and reasons for contact.
- Churn Status: Binary indicator of whether a customer has churned.

CUSTOMER PROFILE & CHURN METRICS

► How many customers have churned, and their proportion?

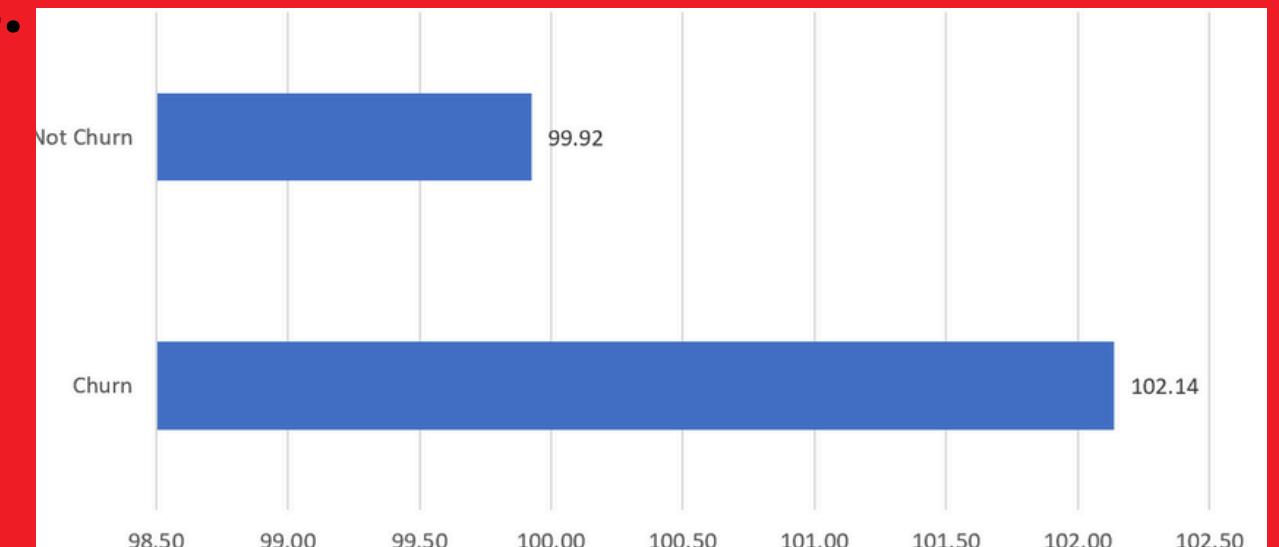
- Total Churned Customers: 598
- Churn Proportion: 14%
- Insight: The churn rate is substantial and requires immediate action.



► Average account length for churned vs. non-churned customers.

Average Account Length:

- Churned: 102.14
- Non-Churned: 99.92
- Insight: Longer-tenured customers are slightly more likely to churn.

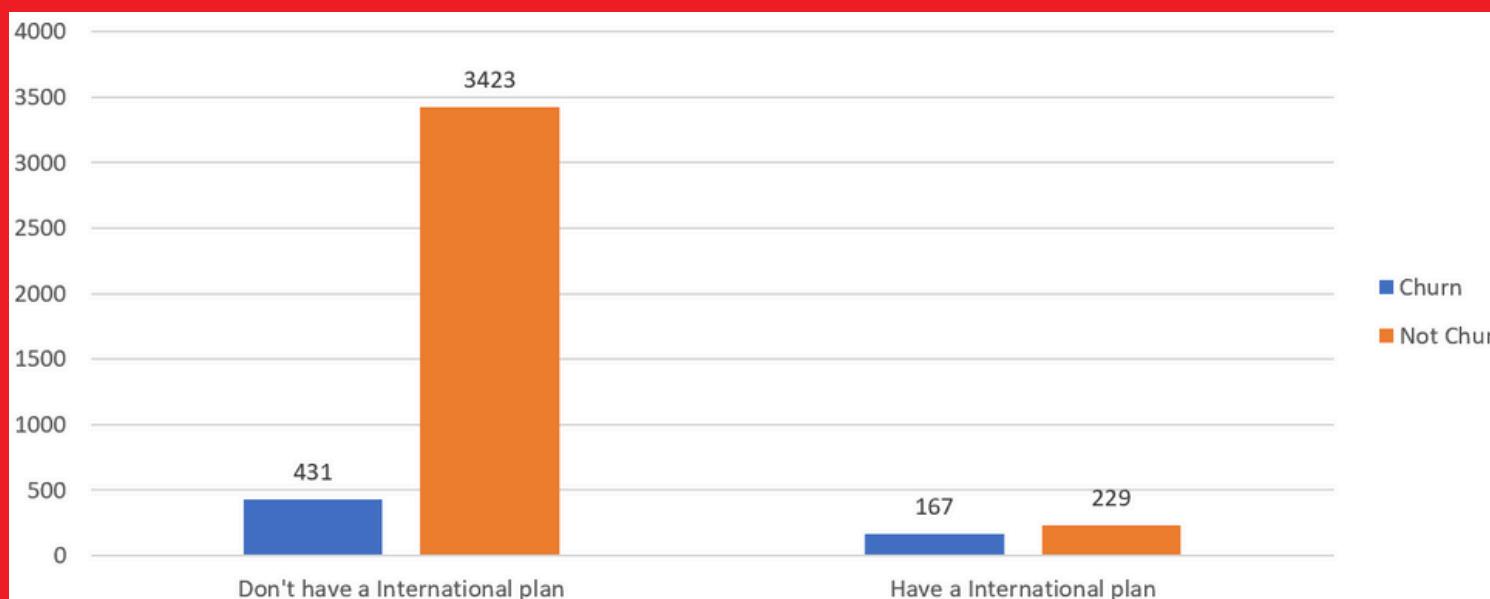


SERVICE PLANS & CHURN

International plan and churn correlation.

Churn Rate:

- With Plan: 42%
- Without Plan: 11%
- Insight: International plan subscribers are at a significantly higher risk of churn.



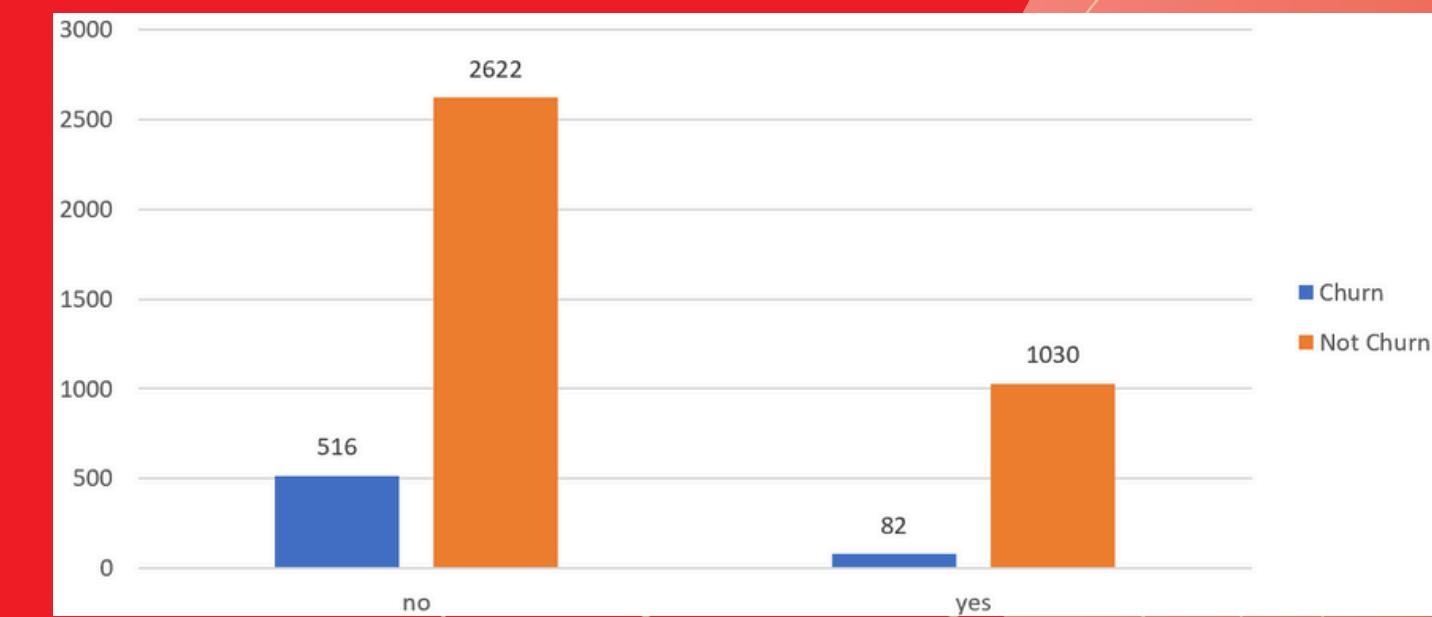
Voice mail plan and churn.

Churn Rate:

- With Plan: 7%
- Without Plan: 16%
- Insight:

Customers with voice mail plans are less likely to churn.

Voice mail plans may enhance customer engagement and satisfaction.



SERVICE USAGE PATTERNS

► Customer service calls and churn.

Content:

- High Call Volume (6+): 64% churn rate.
- Low Call Volume (0–2): 11% churn rate.
- Insight: Frequent customer service interactions indicate dissatisfaction.

► Total day minutes and churn relationship.

Overview

- Churned Customers: Average 208.99 minutes.
- Non-Churned Customers: Average 175.56 minutes.

Key Insight

Customers with higher day call usage are more likely to churn, as they might be experiencing higher costs or dissatisfaction with the service quality during peak hours.

► Day, evening, and night call charges.

Day Call Charges

- Churned Customers: 35.53 (average)
- Non-Churned Customers: 29.84 (average)
- Insight: Higher day call charges are strongly correlated with customer churn.

Evening Call Charges

- Churned Customers: 17.85 (average)
- Non-Churned Customers: 16.88 (average)
- Insight: Slightly higher evening charges are observed in churned customers, though the impact is less pronounced.

Night Call Charges

- Observation: Minimal differences in night call charges between churned and non-churned customers.

INTERNATIONAL USAGE & CHARGES

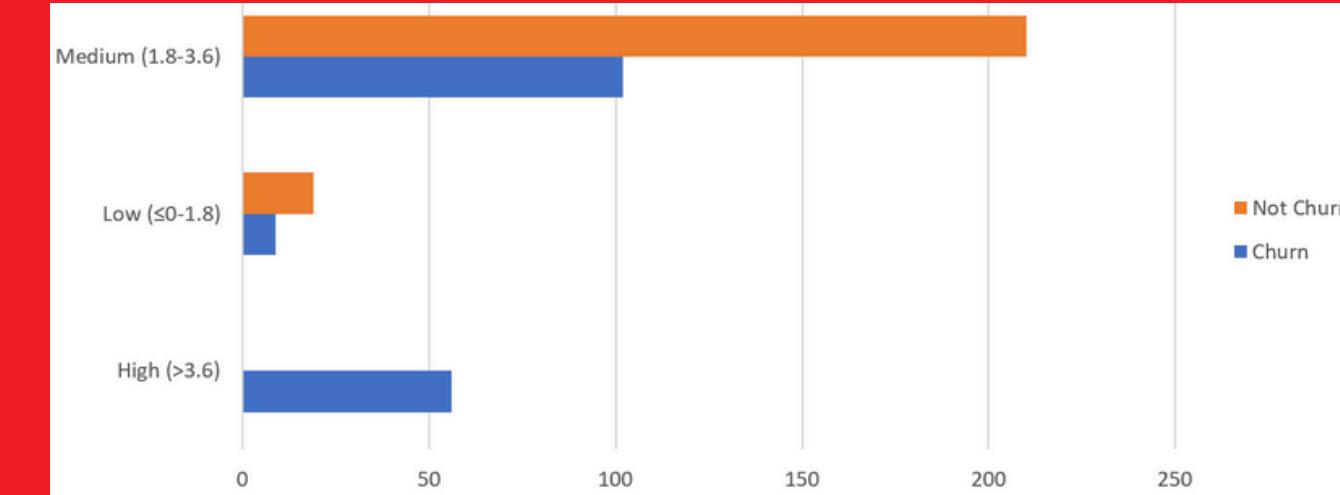
► Total international minutes and charges (churned vs. non-churned).

Average International Minutes:

- Churned Customers: 10.41 minutes
- Non-Churned Customers: 13.23 minutes
- Average International Charges:
- Churned Customers: 2.87
- Non-Churned Customers: 2.75

Insights

- Lower Usage, Higher Churn: Churned customers use fewer international minutes, hinting at dissatisfaction beyond usage.
- Pricing Sensitivity: Slightly higher charges for churned customers despite lower usage.
- Retention Opportunity: Personalized plans and transparent pricing can reduce churn.



► International calls with/without international plans.

- Churn Rate with International Plan: 42%
- Churn Rate without International Plan: 11%

Insights

- Potential Dissatisfaction: This trend suggests dissatisfaction with the perceived value or cost of international plans.
- Targeted Approach Needed: Indicates the need for customized strategies to address concerns and retain these customers.

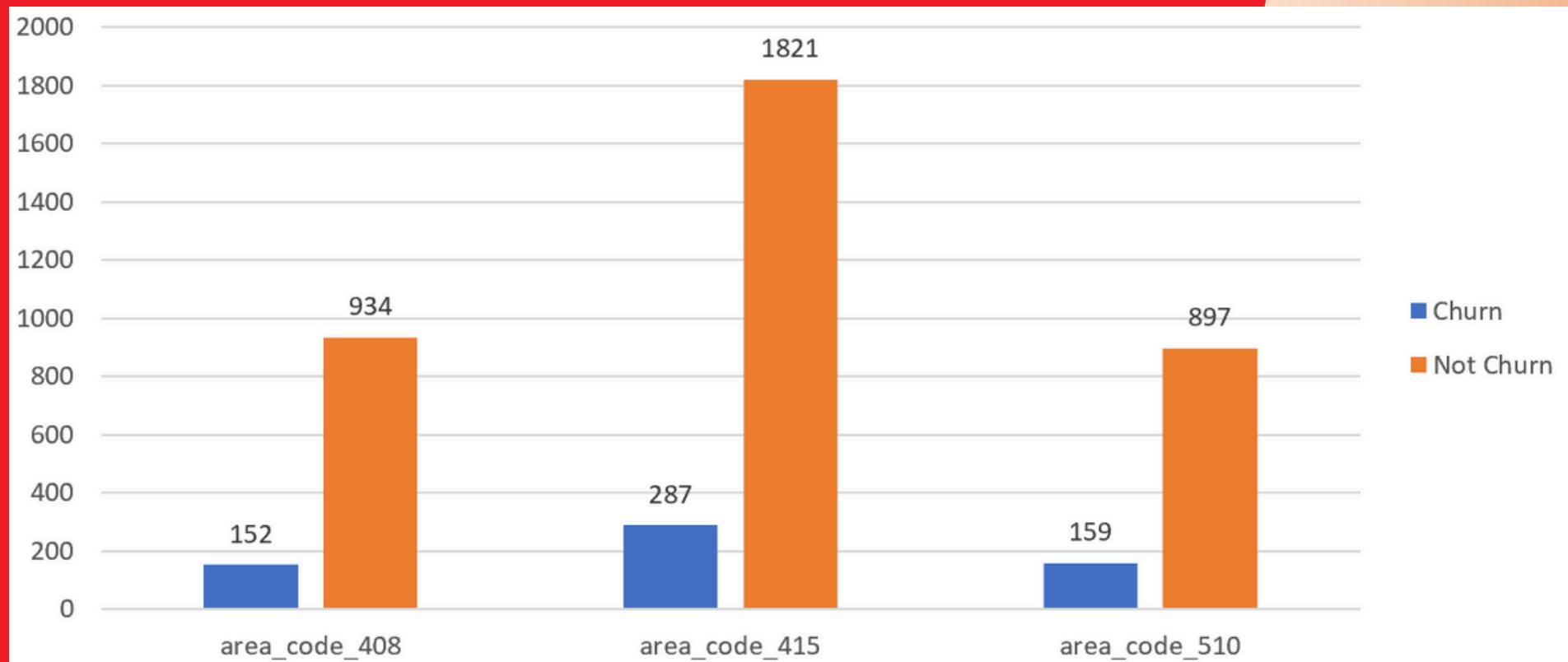
SEGMENTED ANALYSIS

Churn by area code.

- Area Code 408: 14% churn rate.
- Area Code 415: 13.6% churn rate.
- Area Code 510: 15% churn rate.

Insight:

Area Code 510 exhibits the highest churn rate (15%), indicating a regional churn trend that requires targeted retention strategies.



Cluster analysis of customers.

- Cluster 1: Low churn rate (10%), characterized by moderate usage and minimal customer service interactions.
- Cluster 2: High churn rate (17%), characterized by high service usage, frequent customer service calls, and higher charges.
- Cluster 3: Moderate churn rate (12%), with balanced usage patterns but occasional service issues.

Insight:

Cluster 2 represents the most at-risk group due to high service dissatisfaction and elevated charges. Targeted interventions like improved customer support and tailored pricing plans can reduce churn.

Cluster	cl_total_day_minutes	cl_total_eve_minutes	cl_total_night_minutes	cl_total_intl_minutes
1	0.5	-0.4	0.3	0.1
2	-1.2	0.8	-0.5	-1
3	1	-1	0.6	-0.2

Row Labels	Count of norm_churn	Column Labels			Churn Rate
		Churn	Not Churn	Grand Total	
Cluster 1		117	1100	1217	10%
Cluster 2		111	525	636	17%
Cluster 3		370	2027	2397	15%
Grand Total		598	3652	4250	14%

CUSTOMER BEHAVIOR PATTERNS

Relationship between account length and churn.

- Average Account Length (Churned): 102.14 days
- Average Account Length (Non-Churned): 99.92 days

Insight:

Customers with slightly longer account lengths are more likely to churn. This may indicate dissatisfaction building over time. Retention strategies should focus on engaging long-tenured customers with personalized offers and proactive support.

Day minutes and day charges correlation.

- Churned Customers:
 - Day Minutes: 208.99 minutes (average)
 - Day Charges: 35.53 (average)
- Non-Churned Customers:
 - Day Minutes: 175.56 minutes (average)
 - Day Charges: 29.84 (average)

Insight:

Higher day minutes correlate with increased day charges, significantly contributing to churn.

Evening usage patterns and churn.

- Churned Customers:
 - Evening Charges: 17.85 (average)
- Non-Churned Customers:
 - Evening Charges: 16.88 (average)

Insight:

Churned customers have slightly higher evening charges, indicating a potential sensitivity to pricing during off-peak hours.

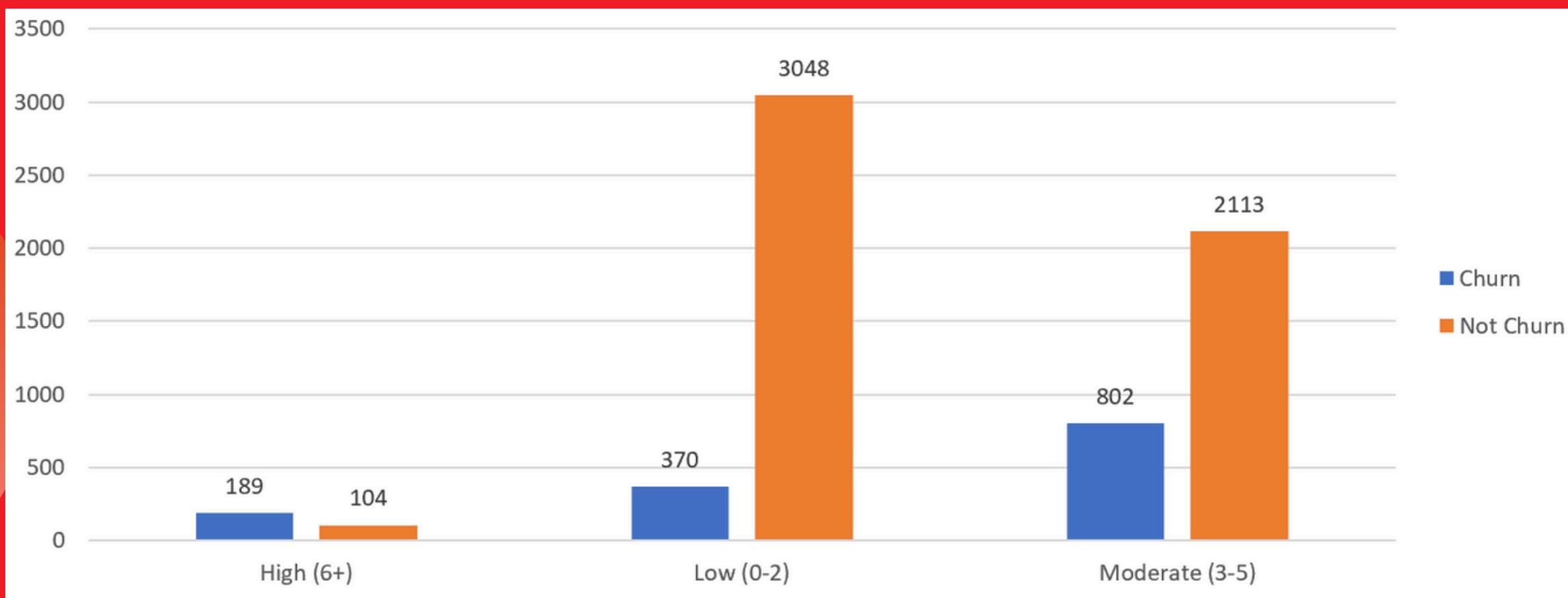
CUSTOMER SERVICE INSIGHTS

Effect of different customer service call reasons on churn.

- High Call Volume (6+ Calls): 64% churn rate.
- Moderate Call Volume (3–5 Calls): 24% churn rate.
- Low Call Volume (0–2 Calls): 11% churn rate.

Insight:

Frequent customer service calls are strongly correlated with churn, highlighting unresolved issues or dissatisfaction



KEY FINDINGS

Summarized Insights

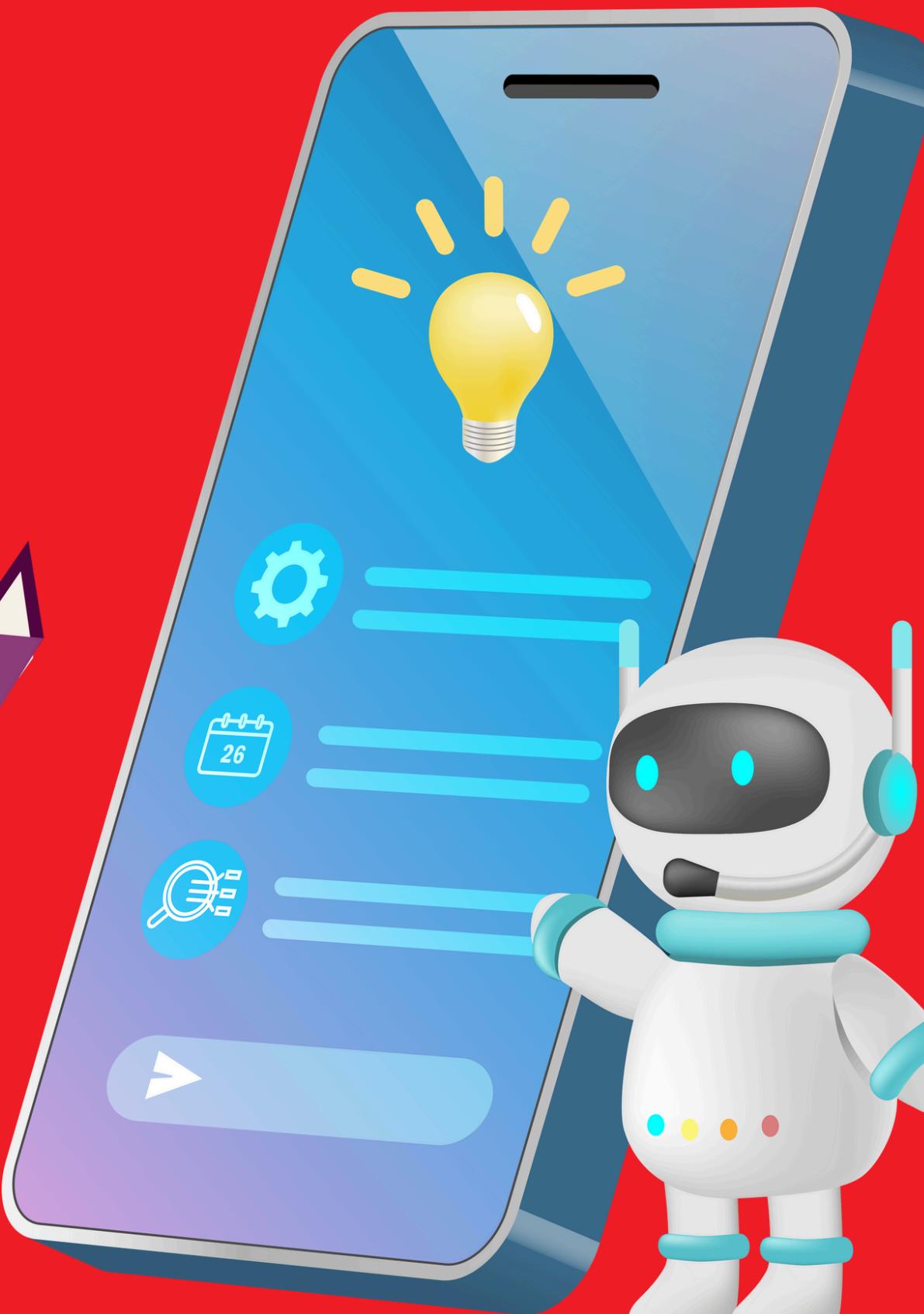
- Customer Tenure: Churned customers average slightly longer account lengths (102.14 days vs. 99.92).
- International Plans: Higher churn for plan users (42% vs. 11%).
- Customer Service Calls:
 - High volume (6+ calls): 64% churn.
 - Low volume (0–2 calls): 11% churn.
- Call Usage and Charges:
 - Day Minutes: Higher for churned (208.99 vs. 175.56).
 - Day Charges: Higher for churned (35.53 vs. 29.84).
 - Evening Charges: Slightly higher for churned (17.85 vs. 16.88).
 - International Charges: Slightly higher for churned.
- Voice Mail Plans: Lower churn with plans (7% vs. 16%).
- Area Code: High churn in area codes 415 (13.6%) and 510 (15%).
- Cluster Analysis: Cluster 2 shows the highest churn (17%).

Top Churn Factors

1. International Plans: High charges and dissatisfaction.
2. Customer Service: High call volumes indicate dissatisfaction.
3. High Call Charges: Correlated with churn.
4. Area-Specific: Regions like 415 and 510 show higher churn.
5. Voice Mail Plans: Absence leads to higher churn.

Next Steps

- Target international plan users with better pricing.
- Improve customer service to resolve issues faster.
- Enhance billing transparency and support for high-usage customers.



RECOMMENDATIONS

Recommendations to Reduce Churn

1. Enhance Customer Support: Train agents for first-call resolution, targeting customers with 3+ service calls (64% churn rate).
2. Tailor Plans: Offer personalized pricing for international plan users (42% churn rate).
3. Address High Charges: Provide discounts for customers with high day or international charges.
4. Promote Voice Mail Plans: Offer free trials to reduce churn (7% vs. 16% without plans).
5. Focus on High-Churn Areas: Address issues in area codes 415 and 510 (15% churn rate).
6. Monitor Usage Patterns: Target high day-minute users (250–300 minutes) with alerts or upgrades.
7. Leverage Predictive Models: Identify at-risk customers using machine learning.
8. Improve Billing Transparency: Simplify and clarify billing to reduce pricing dissatisfaction.
9. Cluster-Based Strategies: Tailor solutions for high-risk clusters like Cluster 2 (17% churn).

Next Steps: Pilot, measure impact, refine, and scale.



CONCLUSION

Understanding churn drivers is crucial for improving customer retention and enhancing business performance. This analysis highlights key factors like international plan dissatisfaction, high service call volumes, elevated charges, and regional behaviors contributing to churn.

Next Steps

- Implement tailored retention strategies for high-risk segments, such as international plan users.
- Enhance customer service processes to address issues proactively and efficiently.
- Provide transparent billing and personalized communication for high-usage customers.
- Use insights to refine marketing and pricing strategies to better meet customer needs.





THANK YOU

IF YOU HAVE ANY FURTHER
QUESTIONS OR WOULD LIKE TO
EXPLORE OPPORTUNITIES TO WORK
TOGETHER, PLEASE DON'T HESITATE
TO REACH OUT TO ME.



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