

Customer Churn Analysis Documentation

1. Introduction

Customer churn is a critical metric that determines the rate at which customers stop doing business with an entity.

This project aims to analyze customer churn by evaluating factors contributing to it, identifying high-risk customers, and suggesting strategies for retention.

2. Objectives

- Identify key factors influencing customer churn.
- Analyze churn trends based on demographics, contract type, payment methods, and service usage.
- Provide actionable insights to reduce churn and increase customer retention.
- Improve revenue forecasting and business decision-making.

3. Data Sources

The dataset includes customer-related information such as:

- Demographic Details: City, gender, dependent status.
- Subscription Information: Contract type, internet service, tenure.
- Billing Information: Monthly charges, payment method, paperless billing.
- Churn-related Indicators: Customer satisfaction score, cross-sell rates, and churn rates.

4. Key Metrics & Definitions

- High-Risk Customers: Customers likely to churn based on predictive modeling.
- Service Cross Sell Rate: Measures opportunities for selling additional services.
- Customer Satisfaction Proxy: An estimated measure of customer satisfaction.
- New Customer Acquisition Rate: Rate at which new customers are onboarded.
- Customer Churn Rate: Percentage of customers leaving the service.
- Customer Lifetime Value (CLTV): Predicts the total revenue a business can expect from a single

customer.

5. Dashboard Insights

The analysis is presented through interactive dashboards covering:

5.1 Churn Trends

- Top Cities by Total Revenue: Identifies cities generating the highest revenue.
- Top Cities by Monthly Revenue: Displays cities with significant revenue generation.
- Churned Customers by Contract: Compares churn rates among contract types (month-to-month, one-year, two-year).
- Churned Customers by Payment Method: Highlights payment methods associated with high churn.
- Churned Customers by Reason: Displays major reasons for customer churn.

5.2 Customer Churn Breakdown

- Churn Rate by Contract: Month-to-month contracts have the highest churn rates.
- Churn Rate by Online Security: Customers without security services have a higher churn rate.
- Churn Rate by Multiple Lines: Analyzes whether having multiple lines affects churn probability.
- Churn Rate by Device Protection: Customers without protection plans show higher churn rates.
- Churn Rate by Internet Service Type: Fiber optic users show the highest churn rate.
- Churn Rate by Paperless Billing: Customers using paperless billing tend to churn more.
- Churn Rate by Dependents: Customers without dependents have a significantly higher churn rate.

6. Key Findings

- Month-to-month contracts have the highest churn rates, while long-term contracts retain customers better.
- Electronic check payments are linked to higher churn rates, suggesting a need for alternative payment incentives.
- Competitor offerings, poor customer service, and limited data plans contribute to churn.
- Customers with additional services (security, backup, multiple lines) are less likely to churn.

7. Recommendations

- Enhance Customer Retention: Provide discounts for long-term contracts.
- Improve Payment Methods: Encourage automatic payments to reduce churn risk.
- Optimize Service Offerings: Improve internet speed, security, and bundled services.
- Enhance Customer Support: Train support teams to improve customer satisfaction.

8. Conclusion

This analysis provides a detailed insight into customer churn patterns, allowing businesses to take proactive steps in retaining customers, reducing churn, and improving overall revenue generation.

9. Future Work

- Incorporating machine learning models to predict churn with higher accuracy.
- Exploring real-time data analytics for dynamic churn analysis.
- Conducting customer surveys to understand deeper reasons for churn.