



 (+233) 534724122/0545343155
 enoch@onlyqualitydata.com
 Abelemkpe, Malm St.

CHURN ANALYTICS REPORT FOR VERTEX MOBILE NET

Prepared by Philip Mawuena Azanu

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INTRODUCTION

The objective of this project is to analyze churn data for Vertex Mobile Net, a telecom company, that provides communication services to individuals and organizations and develop insights to reduce customer attrition. Churn analytics helps identify customers likely to leave and uncovers factors contributing to churn, aiding proactive retention strategies.

The dashboard highlights key performance metrics such as total number of customers, total number of active and inactive customers, churn rate, customer demographics, payment methods, and service usage. Deliverables include:

- Interactive visuals for contract types, payment methods, and churn reasons.
- Data insights into churn trends and implications for Vertex Mobile's operations.

DATA PREPARATION.

The dataset includes customer account information, usage patterns, service preferences, and demographic details collected internally from Vertex Mobile Net's systems.

Data Cleaning:

- **Missing Values:** Handled via imputation or exclusion, depending on the variable.
- **Data Accuracy:** Ensured by standardizing input formats and removing inconsistencies.
- **Duplicates:** Checked and removed to maintain data integrity.

Data Preparation:

- Transformed categorical variables (e.g., gender, contract types) into analyzable formats.
- Created custom column calculated field for age group.
- Detected the data types of all columns in the data set.



DASHBOARD DESIGN AND FEATURES

Overview:

The dashboard is an interactive analytical tool designed to:

- Monitor churn rates across various customer segments.
- Analyze correlations between demographics, usage, and churn patterns.
- Provide actionable insights for decision-making.

Visualizations:

- Churn Rate by Age Group: Highlights higher churn rates among certain age groups (e.g., 30-39 years).
- Churn Rate by Payment Method: Reveals the various payment methods by customers either by paper check, direct debit or credit card.
- Churn Rate by Contract Type: Month-to-month contracts have the highest churn rates.
- Churn Reasons: Shows the various dominations by categories like price dissatisfaction, attitude, competitor and others.
- Customer Distribution: Visualizes total number of customers by gender, contract type, age group, Intl Active, Intl Plan and payment method.

KEY INSIGHTS

From the overview dashboard, the Total Customers is 6,687, Active Customers is 4,891 (i.e., 73.14% of total), Inactive (Churned) Customers is 1,796 (26.86% churn rate) and Churn Rate is 26.86%. This highlights the overall customer base and the significant churn issue that requires attention.

- **Total Customers by Contract Type:** From the visualization, customers enrolled on Month-to-Month by contract type dominates with approximately 60% of total customers (3,411), One-Year Contracts about 25% (1,797) and Two-Year Contracts around 15% (1,479). Customers with month-to-month contracts are significantly more prone to churn, suggesting instability in short-term engagements.

- **Total Customers by Gender:** In the data set, male customers (3,379) are slightly higher than female customers (1,797). Female Customers are close to parity with male customers and customers who Prefer not to say show minimal representation (7). No significant churn difference between males (26.55%) and females (27.17%). However, those who prefer not to disclose their gender have a higher churn rate (28.57%).
- **Total Customers by Age Group:** Total customers below <20 year show minimal representation, 20-29 years show moderate representation with a 23.36% churn rate, 30-39 years with churn rate of 23.28%, 40-49 years with a churn rate of 25.06% and 50+ years have higher churn rates (30.76%). Higher churn in older demographics. Older adults (50+ years) are the most likely to churn, reflecting dissatisfaction or other life-stage factors.
- **Total Customers by International Plan and Activity:** The total Intl Plan Users are segregated into Active Users (Yes- 2,571) with a 7.59% churn and Inactive Users (No- 4,116) with churn at 22.21%. Also, customers on No Intl Plan with No Active Users show 20.01% churn and Inactive Users with the highest churn at 71.19%.

Customers with unused international plans or those not engaged with their plans have the highest churn rates, indicating underutilization is a critical issue. Enhancing international plan usability could reduce churn for specific segments.

- **Total Customers by Payment Method:** The payment methods or modes implored by the total number of customers were the paper check, credit card and direct debit. Total number of customers on the Credit Card (2,614) having the majority showed a churn rate of 14.46%, Direct Debit (3,702) with moderate adoption had churn rate of 34.49% and Paper Checks (371) being the smallest group but highest churn rate at 38.01%.
Payment methods like paper checks correlate with elevated churn levels, possibly due to convenience factors.
Paper check users face churn challenges, likely due to outdated payment preferences. Preference for credit cards correlates with reduced churn and Paper-check users may benefit from transitioning to automated payment systems
- **Churn Rate by Unlimited Data Plan:** Customers with Unlimited Plan showed 32.11% churn rate whereas customers without Unlimited Plan showed 16.10% churn.

Customers with unlimited data plans are churning more, perhaps due to price dissatisfaction or unmet expectations.

- **Churn Rate by Contract Type and Gender:** Month-to-Month Contracts: Highest churn, regardless of gender. One-Year and Two-Year Contracts shows reduced churn, with females slightly more stable.

Commitment to longer-term contracts correlates with reduced churn.

- **Churn Rate by Account Length:** The line chart from the visualization reveals customers with account length ranging from 0-20 Months have extremely high churn rates, peaking at 62.10% in the 1st month. Customers with account length >20 Months reveals a gradual decline in churn with the lowest churn rate of 1.80% after 71 months.

Newer customers are more likely to churn, indicating challenges in onboarding and early retention.

- **Churn Rate by Churn Category and Churn Reason:** This category reveals the top reasons why customers churn with competitor offerings and pricing dissatisfaction being dominant each having a churn rate of 100%. Other reasons include attitude toward service and general dissatisfaction. This emphasizes the need to focus on competitive pricing and service differentiation.
- **Churn by Senior Status:** The data illustrates that senior customers have a higher churn at 38.46% as compared to non-senior customers having lower churn at 24.18%. This could be that some seniors may require tailored offerings or better support.

RECOMMENDATIONS

Strategies:

1. Retain Month-to-Month Customers:

- Offer loyalty incentives or discounts for switching to long-term contracts.

2. Improve Payment Convenience:

- Encourage digital payment methods with promotional offers.

3. Enhance Service Usage:

- Target underutilized international plan users with personalized campaigns.

Improvements:

- Collect detailed data on churn reasons for deeper granularity.
- Enhance customer feedback mechanisms to address dissatisfaction more effectively.

CONCLUSION

The dashboard offers comprehensive insights into churn behavior across multiple dimensions, emphasizing contract type, payment method, demographic factors, and service engagement. Each visualization highlights critical areas for Vertex Mobile to prioritize its efforts in improving customer retention.

