

VERTEX MOBILE NET

TELECOM CHURN ANALYSIS PROJECT

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Introduction

In today's highly competitive telecommunications market, customer retention is paramount for sustaining growth and profitability. Vertex Mobile Net, a leading mobile service provider, is keenly aware of the challenges associated with customer churn---the phenomenon where customers discontinue their subscriptions. Understanding the factors that contribute to churn is essential for developing effective retention strategies and enhancing overall customer satisfaction.

This project aims to analyze various dimensions of customer behavior at Vertex Mobile Net, focusing specifically on churn rates associated with different service plans and customer interactions. Through a comprehensive examination of data related to international calling plans, customer service interactions, and account metrics, this analysis seeks to uncover patterns that may indicate why certain customer segments are more likely to churn.



Introduction

Project Objective

1. Understanding Customer Churn
2. Quantify the Attrition rate
3. Identify key drivers of churn
4. Segment Customer Base
5. Develop recommendations
6. Support decision making



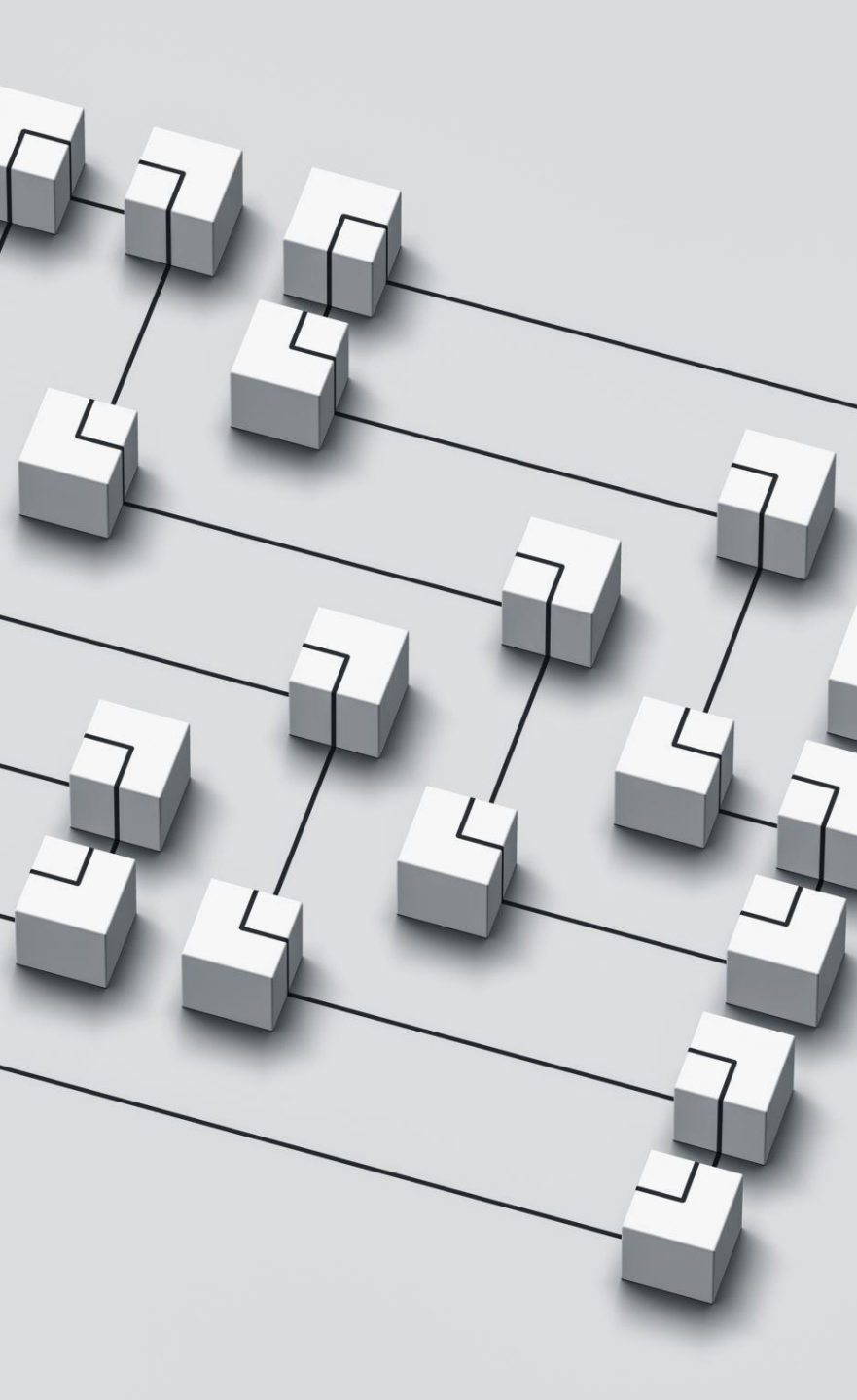
Introduction

Scope

This project aims to analyze customer behavior and churn rates for Vertex Mobile Net, focusing on understanding the factors that influence customer retention and satisfaction. The analysis will leverage customer data to derive insights related to various service plans, customer interactions, and demographic characteristics. The findings will be visualized through an interactive dashboard to facilitate data-driven decision-making.

Key Deliverables

- Churn rate
- Customer life-time value
- Customer retention rate
- Average Revenue per user
- Customer Service Interaction Insights
- Net promoter score
- Time to resolution
- Usage trends
- Recommendations and Solutions
- Interactive Dashboard



Data Preparation

Data Source

The data used for the analysis of churn rates and customer behavior for Vertex Mobile Net is sourced from various internal databases and external data repositories. The key components of the data include:

- Customer Status
- Demographics
- Contract information
- Subscription types and charges
- Map Visual



Data Preparation

Data Cleaning

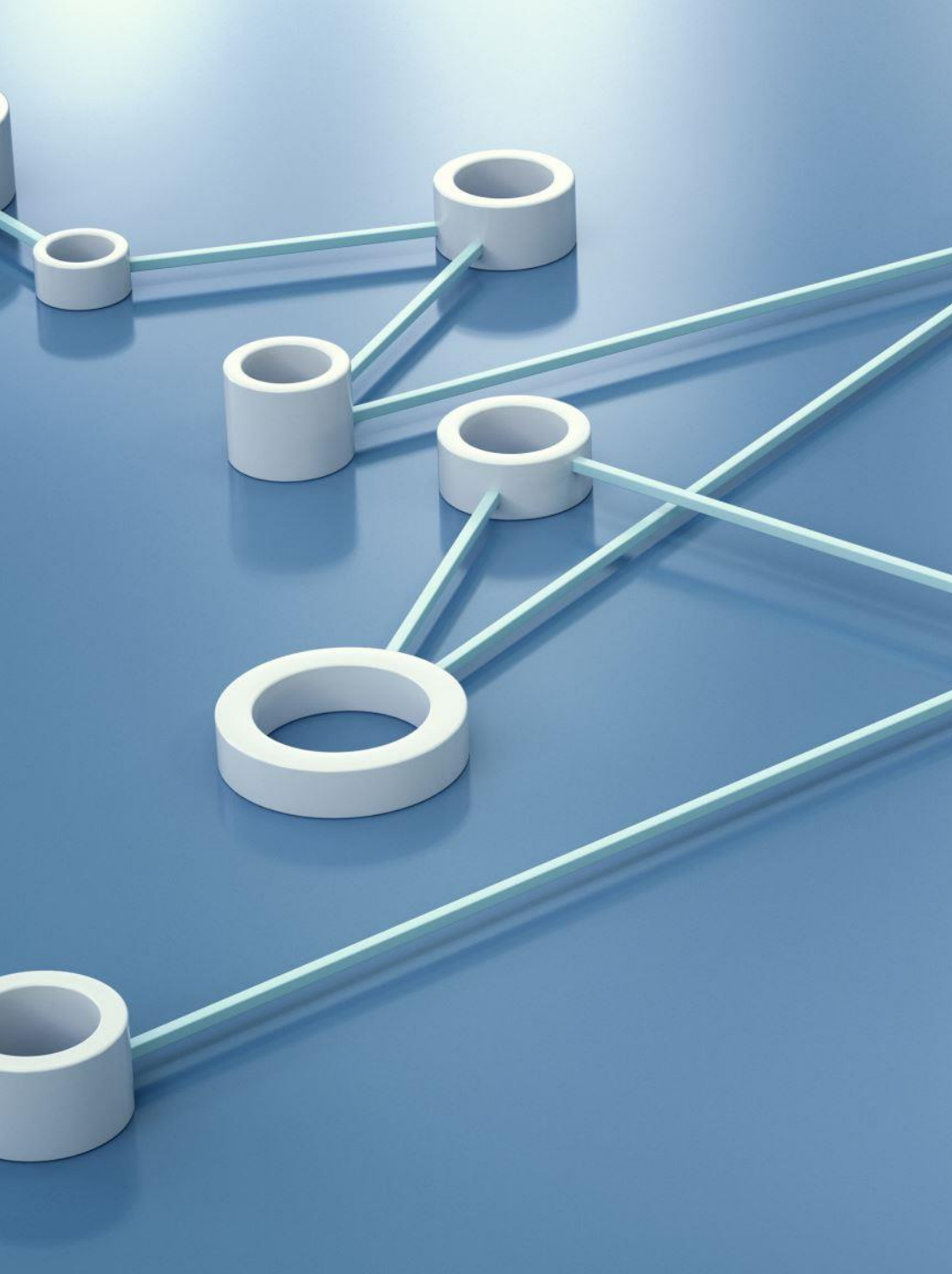
The data cleaning process for the Vertex Mobile Net project involved several key steps to ensure accuracy and reliability:

1. Initial review of documents/data set
2. Handling of missing values and filtering the data (information that are inconsistent with the data set)
3. Ensure data accuracy
4. Standardization of categorical variables
5. Validation and cross referencing
6. Final review and documentation

Data Preparation

Before visualizing the data for the Vertex Mobile Net project, several transformations and preparations were undertaken to ensure the dataset was optimized for analysis and visualization:

1. Data Aggregation by creating key metrics such as the churn rate, total customer, etc to facilitate quick insights for visualization. These measures were created using DAX in Power Bi.
2. Creating new variables
3. Filtering
4. Data formatting
5. Data type conversion



Dashboard Design and Features

Overview

The dashboard for Vertex Mobile Net is designed to provide a comprehensive analysis of customer behavior, churn rates, and service utilization. Its primary purpose is to empower stakeholders with actionable insights that can inform strategic decisions aimed at improving customer retention and satisfaction.

Main Features

1. Customer Status Page

Displays key metrics related to customer churn, including overall churn rates and segmentation by various factors such as service plans and demographics. This section helps identify at-risk customer groups and trends over time

Dashboard Design and Features

2. Demographics Page

Presents a detailed breakdown of customer demographics, including age, gender, income levels, and geographic distribution. This information is critical for understanding the characteristics of the customer base and tailoring marketing strategies accordingly.

3. Contract Information Page

Provides insights into customer contracts, including contract length, renewal rates, and termination reasons. This page helps identify patterns related to contract terms and their influence on customer loyalty.

Dashboard Design and Features

4. Subscription Types and Charges Page

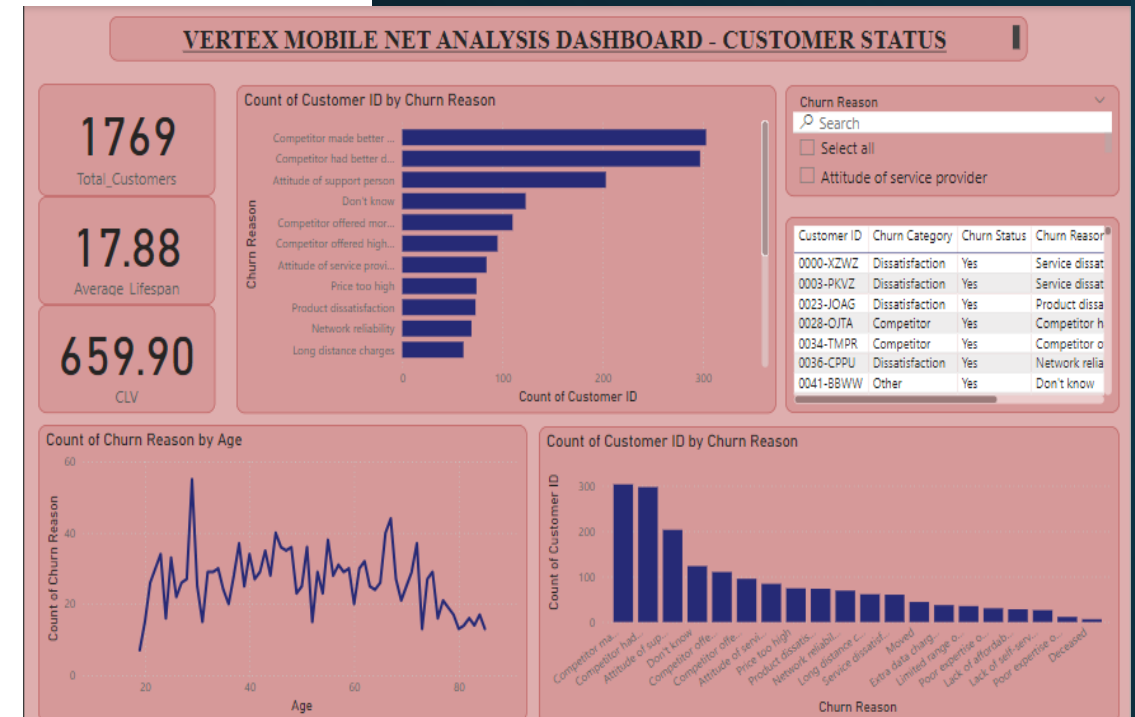
Analyzes the different subscription types (e.g., unlimited data plans, international plans) and associated charges. It highlights how specific plans impact churn rates and customer satisfaction, aiding in the evaluation of current offerings and potential adjustments.

5. Map Visuals Page

Features an interactive map visualizing churn rates by state, including tooltips that show the number of customers and churned customers for each state. This geographical perspective allows for targeted analysis of regional trends and the identification of areas needing attention.

Customer Status

The Customer Status page of the dashboard provides a comprehensive snapshot of customer metrics and churn dynamics for Vertex Mobile Net. It includes several key visualizations designed to aggregate and present critical information about the customer base. At the top, there are cards displaying essential metrics: the total number of active customers, the average lifespan of those customers, and the Customer Lifetime Value (CLV). These metrics serve as foundational indicators of customer health and overall business performance.



Customer Status

The page also features a bar graph that breaks down the count of customer IDs by churn reason, allowing for a quick visual assessment of why customers are leaving.

Additionally, the page explores churn reasons in relation to customer demographics, with a specific focus on age groups. This includes a count of churn reasons by age, which helps in understanding how different age segments respond to services. Finally, a detailed view provides a granular count of customer IDs associated with each churn reason, facilitating deeper analysis and targeted interventions.

Customer Status

Key Insights

The Customer Status page reveals several key insights that are critical for understanding customer behavior and churn dynamics at Vertex Mobile Net.

1. Customer Growth and Retention:

The total number of active customers is a foundational metric that indicates the effectiveness of customer acquisition strategies. A steady increase in active customers suggests successful marketing efforts and a growing market presence. Conversely, if growth is stagnant or declining, it may signal issues in customer retention.

2. Average Lifespan and Customer Lifetime Value (CLV):

The average lifespan of customers provides insight into how long customers typically remain loyal to the company. A declining average lifespan could indicate rising dissatisfaction or increased competition. Meanwhile, CLV highlights the financial value of retaining customers over time, suggesting that efforts to improve retention may yield significant revenue benefits.



Customer Status

3. Churn Reasons Analysis:

The graph visualizations of churn reasons provide a clear picture of the primary factors driving customer departures. Common reasons such as “service dissatisfaction“, “product dissatisfaction” or “Network reliability” can guide immediate action.

4. Granular Insights on Customer Behavior:

The detailed view of customer IDs associated with each churn reason provides granular data that enables targeted interventions. Identifying specific at-risk customers allows for personalized outreach, potentially reducing churn rates through proactive engagement.



Customer Status

Trends

Several significant trends emerge from the data on the Customer Status page:

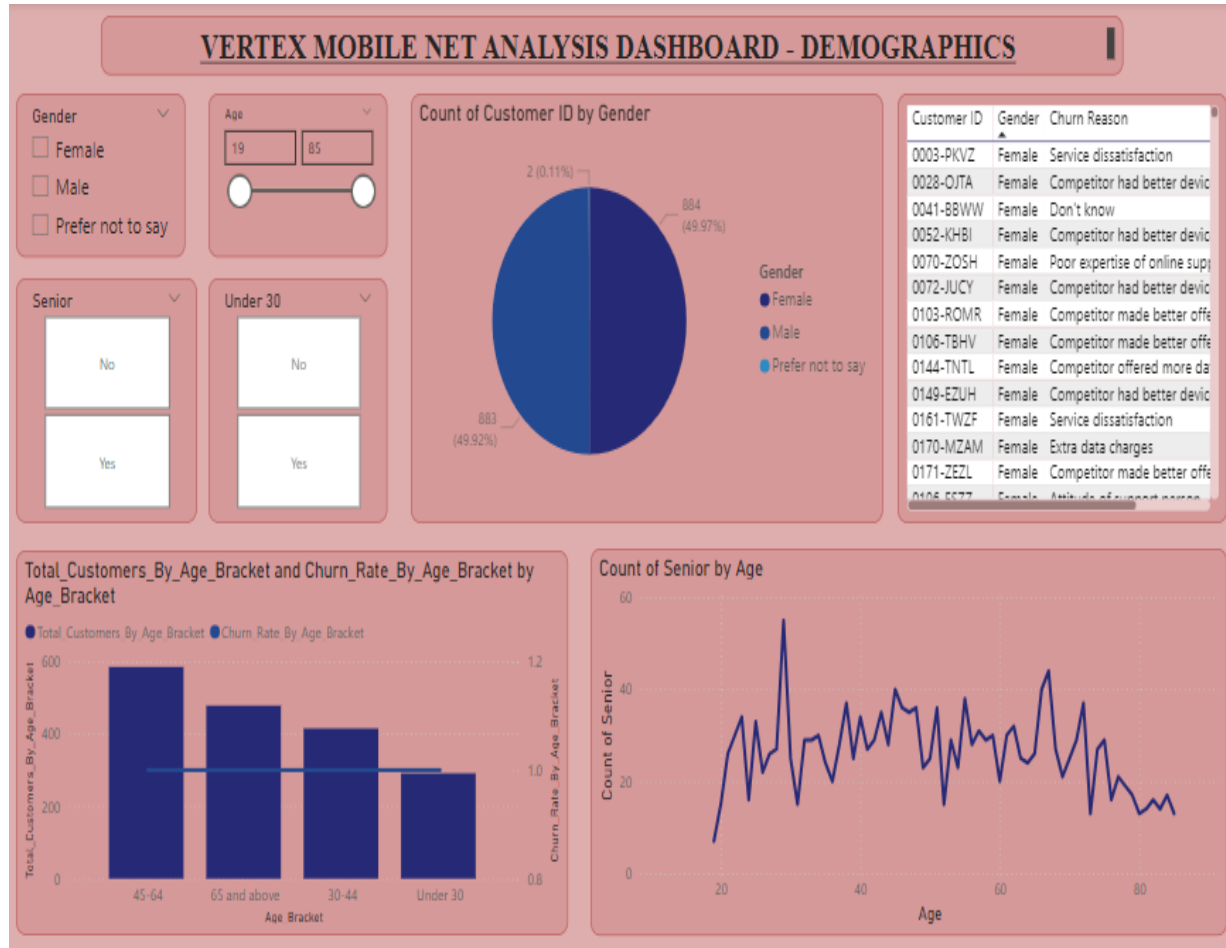
1. Proportional Relationship Between Churn Reasons

Implications

The insights gathered from the Customer Status page have several important implications for Vertex Mobile Net:

1. Strategic Focus on Retention
2. Product and Service Adjustments
3. Targeted Marketing Campaigns
4. Continuous Monitoring and Adaptation

Demographics



The Demographics page of the Vertex Mobile Net dashboard offers a detailed examination of customer characteristics and their implications for churn rates. This page features several key visualizations that collectively enhance the understanding of the customer base. At the forefront, a pie chart displays the distribution of customers by gender, providing a clear picture of the gender balance within the customer population. Accompanying this, a bar graph illustrates the total number of customers segmented by age brackets, revealing which age groups constitute the largest segments of the customer base. Another bar graph presents churn rates by age bracket, allowing for a comparison of retention across different demographics and highlighting which age groups may require targeted retention efforts.

Demographics

Additionally, a line chart tracks the count of senior customers, typically defined as those aged 65 and above, over time or within specified age brackets. This visualization aids in monitoring the growth or decline of this segment, which is crucial for developing age-appropriate services and support.

The page also includes a detailed table that lists customer IDs alongside their gender and specific churn reasons. This granular view facilitates an in-depth analysis of individual churn cases, providing contextual insights that can inform retention strategies.

Overall, the Demographics page serves as a vital resource for understanding the composition of Vertex Mobile Net's customer base, enabling informed decision-making regarding marketing strategies, service development, and customer engagement initiatives.

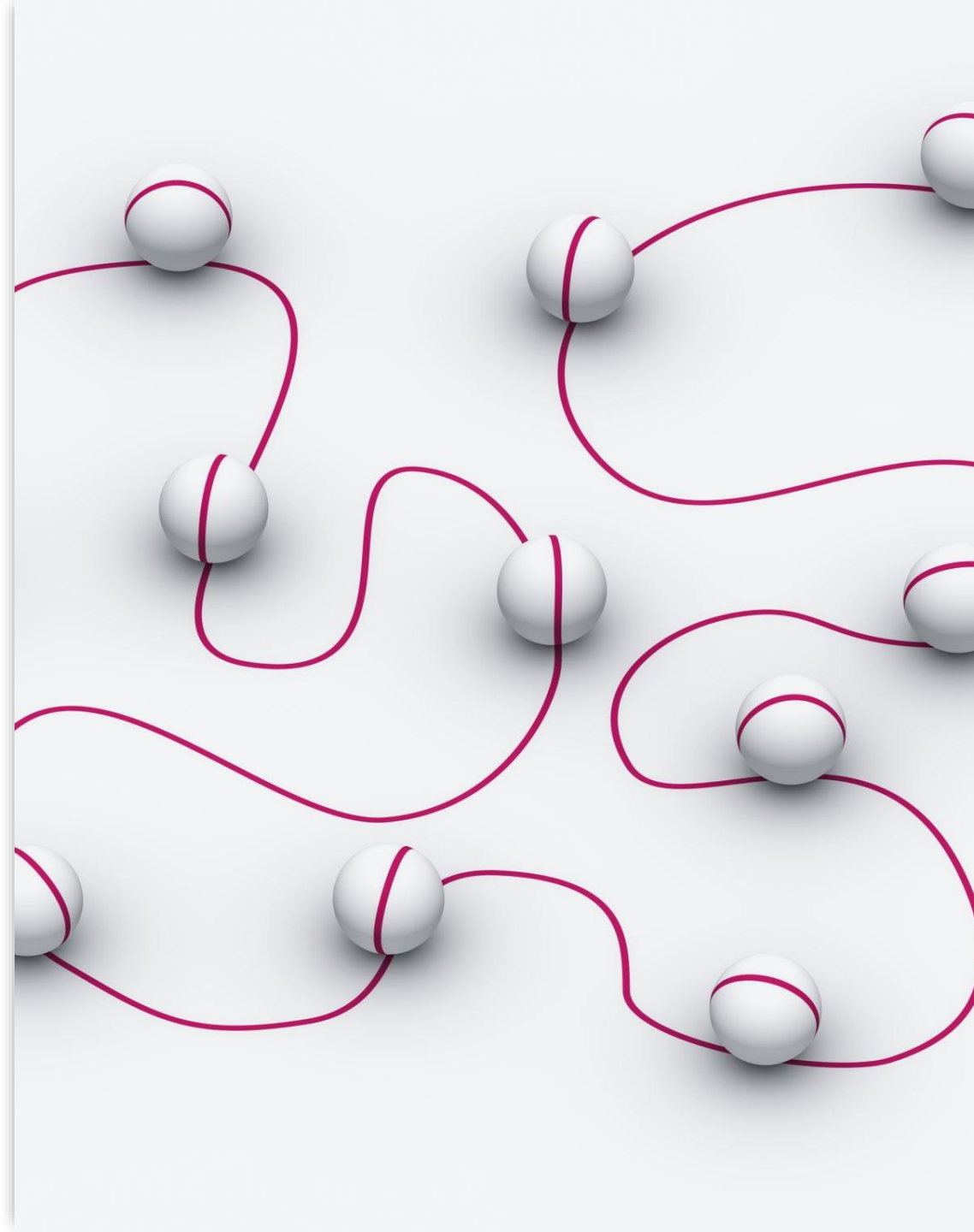
Demographics

Key Insights

The insights derived from the Demographics page provide valuable information for understanding customer behavior and informing strategic decisions at Vertex Mobile Net.

1. The gender distribution pie chart reveals the balance of male and female customers within the base. A significant disparity may indicate the need for targeted marketing strategies to engage underrepresented groups effectively

2. The bar graph illustrating total customers by age bracket highlights which age segments are most prevalent among the customer base. This information is crucial for tailoring products and services to meet the specific needs and preferences of these demographics. Additionally, the churn rate by age bracket graph allows for the identification of vulnerable customer segments, revealing which age groups are experiencing higher churn rates. For instance, if younger customers show a high churn rate, Vertex Mobile Net can investigate potential improvements in engagement or service offerings tailored to this demographic.



Demographics

3. The line chart tracking the count of senior customers provides insights into whether this segment is growing or declining over time. A rising senior population may necessitate specialized services or enhanced support options to cater to their unique needs.

4. Finally, the table detailing customer IDs, gender, and churn reasons offers granular insights that can inform personalized retention strategies. By analyzing specific churn cases, Vertex Mobile Net can identify patterns or common themes in customer departures, enabling targeted interventions to reduce churn.

In summary, the insights from the Demographics page highlight the importance of understanding customer characteristics in relation to churn dynamics. By leveraging these insights, Vertex Mobile Net can implement more effective marketing strategies, develop tailored services, and engage in proactive retention efforts that enhance customer satisfaction and loyalty.

Demographics

Trends

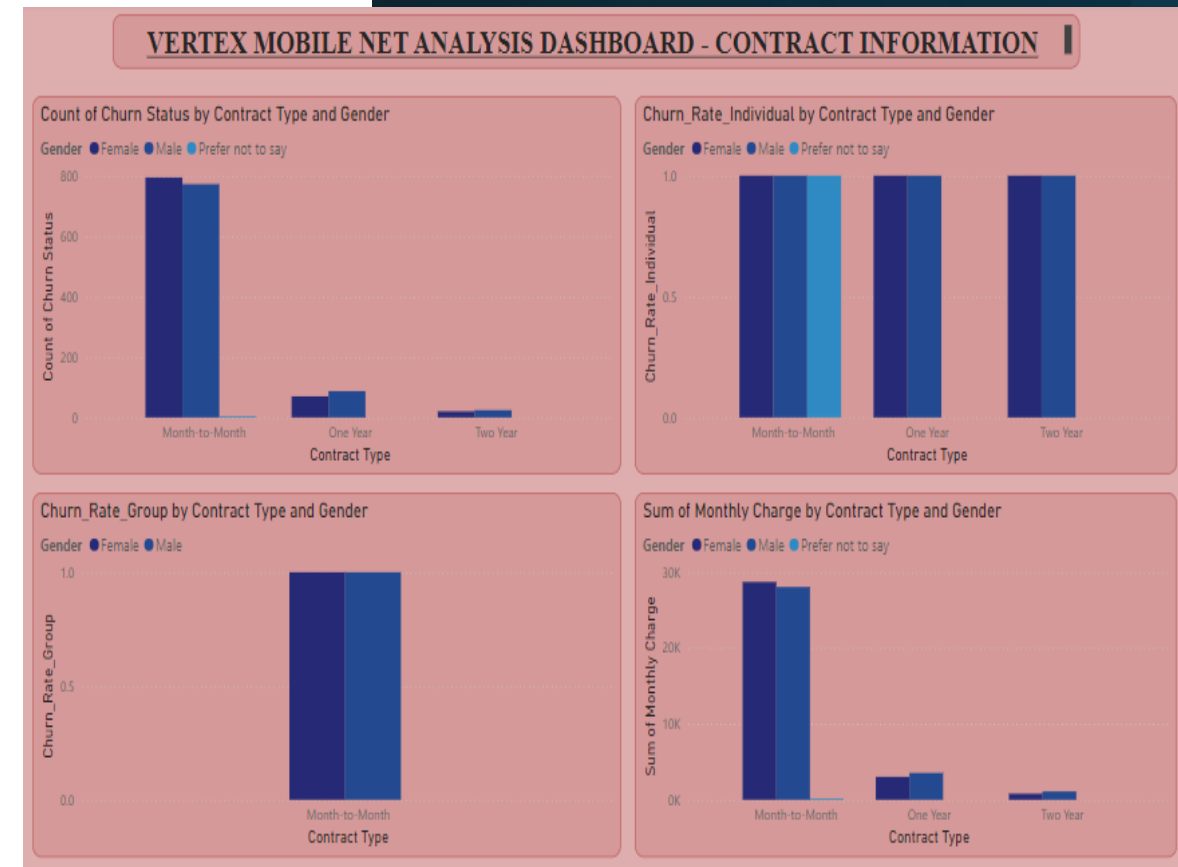
1. Shifts in Customer Demographics
2. Churn Rate Variations by Age
3. Gender-Specific Preferences

Implications

1. Targeted Marketing Strategies
2. Service Development
3. Enhanced Customer Support for Seniors
4. Proactive Engagement

Contract Information

The Contract Information page of the Vertex Mobile Net dashboard is designed to provide critical insights into how different contract types and customer demographics affect churn rates. This page features several key visualizations that collectively enhance the understanding of customer retention dynamics.



Contract Information

At the forefront, a bar graph illustrates the count of customers categorized by their churn status, segmented by contract type (individual vs. group) and gender. This visualization allows stakeholders to compare retention rates across different demographics, highlighting which groups may be experiencing higher churn rates. Following this, two additional bar graphs detail churn rates specifically for individual and group contracts, also segmented by gender. These graphs provide a more nuanced understanding of retention dynamics, indicating which demographic groups are more at risk of leaving.

The page also includes a visualization that sums the monthly charges incurred by customers, further segmented by contract type and gender. This graph offers insights into the financial aspects of different contracts, revealing how pricing may influence customer satisfaction and retention.

Overall, the Contract Information page serves as a vital resource for understanding the interplay between contract types, customer demographics, and churn rates. By analyzing these visualizations, Vertex Mobile Net can identify trends and patterns that inform targeted retention strategies, optimize contract offerings, and enhance customer satisfaction.

Contract Information

Key insights

The visualizations on the Contract Information page reveal several critical insights regarding how contract types and customer demographics influence churn rates. The count of churn status by contract type and gender shows that certain demographics may be more likely to churn based on their contract type. For instance, if individual contracts have a higher churn rate among female customers, this may indicate a need for tailored support or engagement strategies for this group.

The churn rate graphs provide a deeper understanding of retention dynamics. If group contracts demonstrate lower churn rates across both genders, this suggests that customers may derive more value or satisfaction from group plans, indicating a potential area for expansion or marketing focus.

The sum of monthly charges visualization highlights the relationship between contract type and gender in terms of financial commitments. Higher monthly charges for a specific gender in individual contracts could suggest that these customers may feel they are not receiving adequate value for their investment, leading to higher churn.

Contract Information

Trends

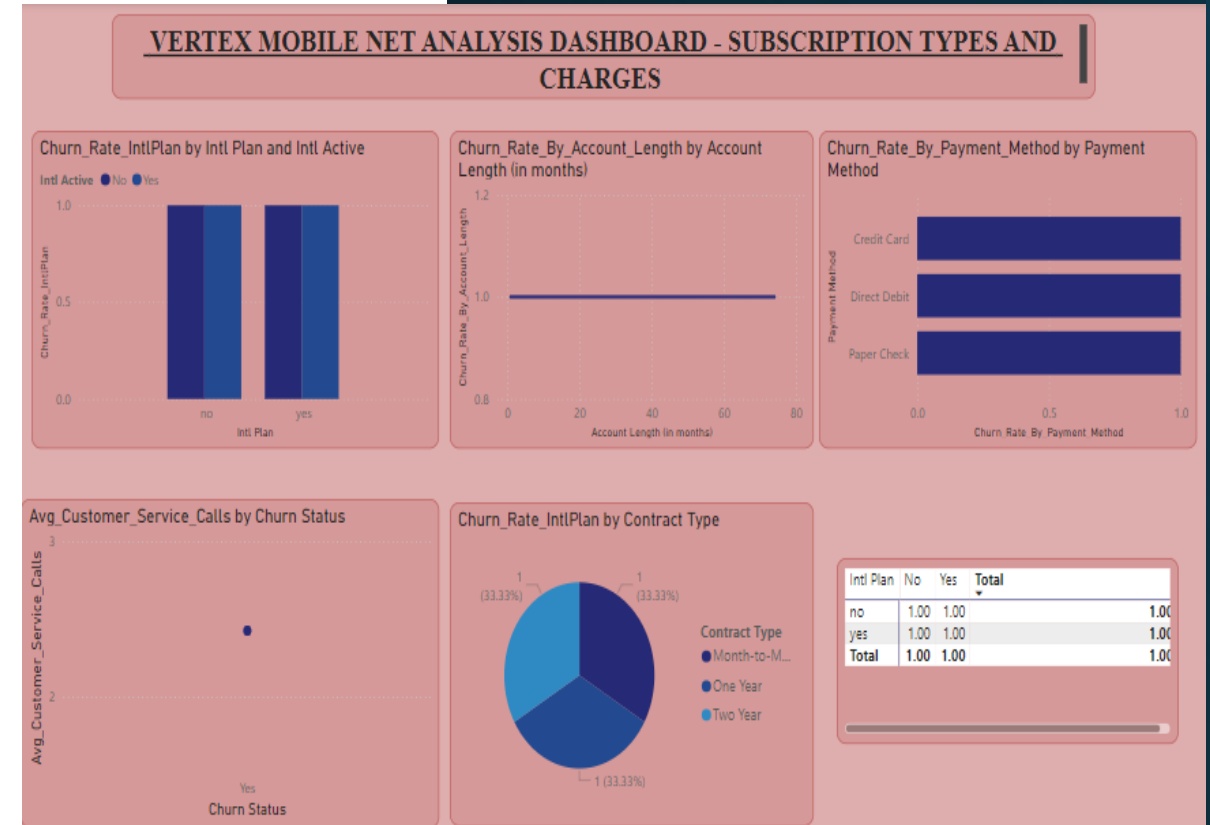
1. Gender Differences in Churn
2. Effectiveness of Group Contracts
3. Pricing Sensitivity

Implications

1. Targeted Retention Strategies
2. Contract Structure Review
3. Pricing Strategies
4. Enhanced Customer Engagement

Subscription types and charges

The Subscription Types and Charges page of the Vertex Mobile Net dashboard offers critical insights into the relationship between subscription plans, payment methods, and customer churn. This page features various visualizations designed to enhance the understanding of customer behavior regarding their choices in subscriptions and payments.



Subscription types and charges

Key visualizations include a bar graph displaying churn rates based on international plan usage and activity status, which highlights how active international plan users tend to experience lower churn. A line graph illustrates the churn rate in relation to account length, revealing that longer-tenured customers are generally more likely to remain loyal. Additionally, a bar graph shows churn rates by payment method, providing insights into how different payment options affect customer retention.

The average customer service calls graph compares the number of calls made by churned versus retained customers, suggesting a correlation between high call volumes and increased churn. Another bar graph explores churn rates for international plans segmented by contract type, indicating how different contracts influence retention among international users. Finally, a table presents details of international plans for active customers, facilitating targeted analysis of this segment.

Overall, the Subscription Types and Charges page serves as a vital resource for understanding customer preferences and behaviors, enabling Vertex Mobile Net to develop informed strategies for enhancing customer retention and satisfaction.



Subscription types and charges

Key Insights

The Subscription Types and Charges page reveals several critical insights into customer behavior regarding their subscription plans and payment methods. The churn rate by international plan and activity graph indicates that active users of international plans tend to have lower churn rates, suggesting that these plans enhance customer retention. Conversely, inactive international plan users may represent a segment that requires further engagement or targeted offers.

The line graph illustrating churn rates by account length shows a trend where longer-tenured customers are less likely to churn. This suggests that fostering long-term relationships with customers could be beneficial for retention.

The churn rate by payment method graph provides insights into how different payment options affect customer retention. For instance, if churn rates are significantly higher for a particular payment method, it may indicate issues with that method, prompting a review of payment processing and customer experience.

A blue pen with a silver tip is positioned diagonally across the left side of the image. It rests on a document featuring a bar chart with blue bars of varying heights. The background is a light blue gradient.

Subscription types and charges

The average customer service calls graph indicates a correlation between high service call volume and increased churn rates. This suggests that customers who encounter issues are more likely to leave, highlighting the importance of improving customer support and addressing pain points.

The churn rate by international plan and contract type further emphasizes the need to evaluate how different contract structures influence retention for international plan users. Understanding these dynamics can help tailor contract offerings.

The table of international plans for active users allows for a granular analysis of customer preferences and behaviors within this segment, providing insights for targeted marketing and retention initiatives.

Subscription types and charges

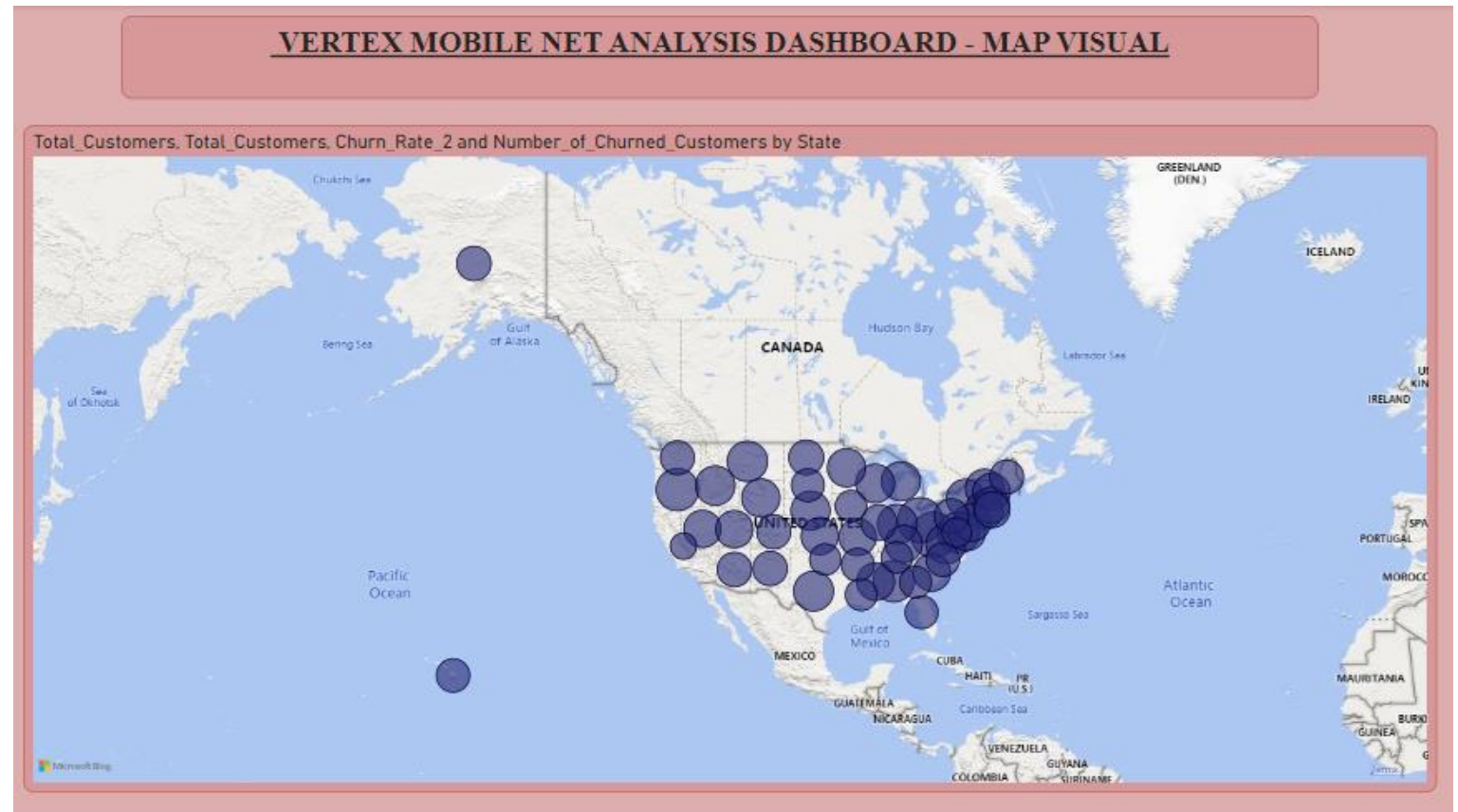
Trends

1. International Plan Engagement
2. Account Longevity and Retention
3. Payment Method Preferences
4. Service Call Correlation

Implications

1. Enhanced International Plan Marketing
2. Focus on Long-Term Customer Relationships
3. Payment Method Review
4. Targeted Retention Strategies

Map Visual



Recommendations

Customer Retention Strategies:

Customized Plans: Develop plans that are more aligned with customer behavior. For instance, introduce lighter international plans for customers who rarely use the service.

Loyalty Programs: Implement loyalty programs that reward customers for continued use of services, especially those that encourage international calling.

Enhanced Customer Support: Increase the availability and responsiveness of customer support specifically for international plans. Ensure that representatives are well-trained to address concerns related to international usage.

Feedback Mechanism: Establish a feedback loop to regularly gather insights from customers regarding their service experience, especially those who are at risk of churning.

Marketing Campaigns: Launch marketing campaigns that highlight the benefits of international plans and showcase testimonials from satisfied customers.



Recommendations

Data-Driven Decisions:

Utilize data analytics to continuously monitor churn rates and customer behavior. This proactive approach can help Vertex Mobile Net identify potential churn risks before they escalate.

Regularly review and update customer segmentation strategies based on evolving data insights to ensure that marketing and retention initiatives are relevant and effective.

Conclusion

This report has presented a detailed examination of the Vertex Mobile Net dashboard, highlighting its significant role in analyzing customer behavior and churn dynamics. The dashboard comprises several key sections, each providing valuable visualizations and insights.

The **Customer Status page** focuses on essential metrics like total customers, average lifespan, and customer lifetime value, offering a snapshot of customer health. The **Demographics page** reveals how gender and age impact churn rates, guiding targeted marketing strategies. The **Contract Information page** illustrates the relationship between contract types, payment methods, and retention, highlighting areas for improvement. Finally, the **Subscription Types and Charges page** emphasizes the influence of subscription plans on churn, particularly the effectiveness of international plans and the importance of long-term customer relationships.

These insights collectively underscore the dashboard's value as a vital tool for data-driven decision-making, enabling Vertex Mobile Net to identify trends, understand customer needs, and implement strategies to enhance satisfaction and reduce churn.

Future work

To further improve the dashboard and its effectiveness, several areas for future analysis and enhancements can be suggested:

1. Predictive Analytics
2. Advanced Customer Segmentation
3. Integration of Customer Feedback
4. Real-time Data Updates
5. A/B Testing Framework

By pursuing these enhancements, Vertex Mobile Net can further leverage the dashboard's capabilities, leading to improved customer retention strategies and overall satisfaction.

THANK YOU