

Solution Guide – Telecommunications ChurnQuest

This Solution Guide presents clear and human-centred explanations for all Basic, Medium, and Advanced questions within the Telecommunications ChurnQuest project. Each insight is derived from real data patterns in the churn dataset and supported by Excel-based analysis. The goal is to interpret the findings in a practical and meaningful way that reflects how customers behave, why they leave, and what the telecom provider can do to improve retention.

Basic Level Insights:

1. State-wise Churn Levels

Certain states show noticeably higher churn rates, including New Jersey, California, Washington, and Maryland. These states stand out as areas where customer dissatisfaction or competitive pressure may be stronger, making them priority regions for targeted retention efforts.

2. Impact of the International Plan

Customers subscribed to the International Plan churn at a significantly higher rate. The gap between customers with and without the plan suggests dissatisfaction with pricing, usage clarity, or unexpected charges that might contribute to customer frustration.

3. Effect of the Voice Mail Plan

Voice mail plan subscribers churn far less than non-subscribers. This indicates that voice mail users tend to be more engaged or perceive greater value in the service, resulting in stronger customer loyalty.

4. Customer Service Calls and Churn

Churn increases sharply among customers who make multiple service calls. When a customer reaches four or more calls, churn risk rises dramatically, suggesting unresolved issues or dissatisfaction with the quality of support.

5. Key Numeric Factors Linked to Churn

Among all numeric variables, international plan usage, customer service calls, and total day-time usage show the strongest relationship with churn. These indicators reflect how billing pressure, service experiences, and usage patterns influence the customer's likelihood to leave.

Medium Level Insights:

1. Call Behaviour Differences

Customers who churn generally have higher day-time minutes compared to non-churners. This suggests that high-value or high-usage customers may feel particularly sensitive to pricing or service quality issues.

2. Account Length and Churn

Account length does not strongly influence churn. Both new and long-standing customers may choose to leave if their service expectations are not met.

3. Contribution of Call Types to Charges

Day-time minutes contribute the most to customer charges and show clear churn patterns. Customers with higher day charges appear more likely to churn, indicating that billing amount may be a pain point for heavy users.

4. International Call Behaviour

International call volume by itself does not strongly drive churn. The issue is less about how often customers call internationally and more about how the pricing structure affects their monthly bill.

5. Usage Differences across Plan Types

Voice mail plan subscribers typically stay longer, while international plan subscribers churn more. Understanding the strengths and weaknesses of each plan type can inform better plan design.

6. Customer Service Interactions

Frequent customer service interactions are directly tied to churn. Customers who repeatedly contact support often feel that their concerns are not being resolved effectively.

7. Evening and Night Usage

Evening and night usage show very weak relationships with churn. These activities do not seem to influence customer satisfaction significantly.

8. High-Risk Customer Patterns

High-risk customers share a consistent profile: heavy day-time usage, subscription to the international plan, and multiple service calls. These individuals represent priority targets for proactive outreach.

Advanced Level Insights:

1. Predictive Model Drivers

A predictive churn model would most likely emphasise the number of customer service calls, day-time usage, international plan status, and the presence of a voice mail plan (as a protective factor). These variables show the strongest influence on churn behaviour.

2. Effective Customer Segmentation

Three customer segments stand out: repeated service-call users with unresolved issues, heavy day-time users who may be price-sensitive and low-risk customers who show stable usage. These segments support more targeted retention strategies.

3. Financial Implications

The financial impact of churn is especially high among heavy day-time users. Retaining these customers can protect a significant portion of revenue.

4. Influence of Service Plans

The International Plan remains the most problematic offering. Its customers churn at nearly four times the rate of regular users. Improving transparency or restructuring this plan may substantially reduce churn.

5. Follow-Up Strategy

A follow-up strategy should prioritise customers showing early churn signals, such as repeated service calls or high day-time usage. Proactive communication and personalised plan recommendations can reduce frustration and strengthen customer loyalty.