

Telco Customer Churn Analysis – Executive Summary

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Background & Objectives

Telco—a major telecom provider—has experienced rising customer churn, eroding both revenue and brand reputation. This analysis aims to pinpoint the factors driving churn and recommend targeted actions to retain at-risk segments.

Approach

- Data Preparation
 - Cleaned 7,043 customer records (handled missing charges, standardized types, created tenure groups).
- Exploratory Analysis
 - Examined churn rates by tenure, contract type, internet service, and monthly charges, using boxplots, bar charts, and summary statistics.
- Modeling
 - Trained a logistic regression (GLM) on the features: Tenure, ContractType, InternetService, MonthlyCharges, and TenureGroup.
 - Evaluated model accuracy, precision, recall, F1-score, and confusion matrix.
- Dashboarding
 - Built an interactive Power BI dashboard with dynamic slicers and key visualizations to support stakeholder exploration.

Key Findings

- Contract Type: Month-to-Month customers churn over ten times more often than Two-Year plan holders.
- Tenure: New customers (less than ten months) exhibit the highest early churn risk.
- Service: Fiber-optic subscribers churn 2.85× more than DSL users, indicating service quality or cost concerns.
- Pricing: Higher monthly charges correlate with a modest increase in churn.

Model Performance

Accuracy: 79%

Precision (Churn): 63%

Recall (Churn): 49%

F1-Score (Churn): 55%

(See the full classification report and confusion matrix in model/model_metrics.txt.)

Recommendations

1. Long-Term Contracts: Offer tiered discounts or perks for 1–2 year plans to reduce month-to-month churn.
2. Early Retention: Trigger personalized offers or outreach at months 3 and 9 to engage new customers.
3. Service Quality: Survey fiber-optic users and implement targeted improvements to reduce dissatisfaction.
4. Value Bundles: Create loyalty bundles or usage credits for high-bill customers to improve perceived value.

Next Steps

- Add a comparative chart of average charges by churn status to deepen pricing insights.
- Deploy the dashboard to Power BI Service for real-time sharing and stakeholder feedback.
- Enhance the model with additional features (e.g., PaymentMethod, StreamingServices) and monitor the impact of retention initiatives.

Attachments:

- [Dashboard PDF](#)
- [Slide Deck](#)