Project: Mobile Customer Churn Prediction

Project brief — data analysis & predictive modeling

This document describes the scope, dataset, evaluation criteria and deliverables for a data science project focused on predicting customer churn for a mobile product. The goal is to identify customers with a high probability of leaving the service and to propose actionable retention strategies based on data-driven insights.

Objective

Identify customers with the highest probability of leaving the mobile service. Using exploratory data analysis and machine learning, anticipate churn and recommend retention actions that create value for both the company and customers, improving experience and operational efficiency.

Context

The company operates in both B2C and B2B markets and provides mobile telephony, internet, television and fixed-line services. Although it has a broad customer base, churn remains a key challenge. Data science is expected to guide the customer experience team toward evidence-based decisions that reduce churn and enhance efficiency.

Key Questions

- How are customer experience variables related to churn?
- Which factors most influence revenue and customer satisfaction?
- What is the Net Promoter Score (NPS) overall, by region, and by category?
- What does the Contact Index reveal about customer–company interactions?
- Which contact reasons are most associated with churn?
- Which variables should be prioritized to evaluate customer experience?
- Which variables are most influential for predicting churn?
- How can the model outputs be translated into effective retention strategies?

Stakeholders

- Customer Experience Team — focused on lowering churn and improving satisfaction.
- Marketing Department — responsible for retention strategies and personalized campaigns.
- Executive Management — concerned with financial impacts and process efficiency.
- Customers — expect reliable service and relevant, personalized recommendations.

Data

The working dataset is a binary Excel extract containing mobile product customers. It includes: the churn flag for each customer, behavioral and experience variables covering the last two months, fields required for computing key metrics such as NPS and Contact Index, and an accompanying data dictionary.

Analysis Criteria

- Exploratory Data Analysis (EDA): examine relationships between experience variables, churn, revenue, and contact reasons.
- Key Metrics: compute NPS and Contact Index at global, regional and category levels.
- Predictive Modeling: develop and validate a Machine Learning model to estimate churn propensity.
- Interpretability: identify key drivers of churn and state modeling assumptions and methodology.
- Software Best Practices: apply reproducible code structure, version control, modular scripts, and documentation.
- Retention Strategy: propose concrete actions integrating service channels and tailored offers based on model outputs.
- Monitoring & Maintenance: define performance monitoring, retraining cadence and data quality checks for production.

Deliverables

- Work plan and methodology (what and how).
- Exploratory analysis report with key insights and metrics (NPS, Contact Index).
- Churn prediction model with performance evaluation and selected features.
- List of most influential variables and interpretability notes.
- Retention strategy with prioritized actions and channel integration.
- Technical documentation and model monitoring & maintenance plan.
- Presentation deck with visualizations adapted for technical and non-technical stakeholders.

Final Recommendations

When presenting results, consider mixed audiences (technical and non-technical). Use clear visualizations, concise summaries and prioritized recommendations. Emphasize actionable insights and the expected business impact of retention measures. Creativity and attention to detail are valued.