Telecom Industry

Customer Churn Analysis Report

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1. **Introduction:** Customer churn is one of the most critical challenges faced by telecom companies.

Churn refers to customers leaving the service provider and switching to competitors. Analyzing churn helps organizations understand customer behavior, identify key factors influencing churn, and design retention strategies.

This project focuses on analyzing telecom customer churn using business intelligence techniques. The aim is to evaluate churn trends across different demographics, salary segments, telecom partners, and service usage behaviors, thereby helping management make data-driven decisions.

1. **Abstract:** This project leverages Excel and Power BI to analyze customer churn from a telecom dataset. Excel was used for initial data cleaning and processing, while Power BI was used for visualization and dashboard creation.

Key findings from the analysis include:

* Out of 244K customers, 49K churned, giving a 20% churn rate.
* Mid-aged (43.9%) and adult (40.1%) groups account for the highest churn.
* High-income and very high-income customers show greater churn tendency.
* Airtel and Reliance Jio customers recorded higher churn rates compared to Vodafone and BSNL.
* Male customers (29K) churned more than female customers (20K).
* Customers with larger families had slightly higher churn compared to solos.

These insights help telecom providers design targeted offers and improve service quality to reduce churn.

# **Tools Used**

o **Excel –** for data cleaning, preprocessing, and handling missing values.

o **Power BI –** for data modeling, interactive dashboards, and visualization.

o **DAX (Data Analysis Expressions) –** for creating measures such as churn rate.

# **Steps Involved in Building the Project**

1. Data Collection & Preprocessing

* Imported raw telecom dataset into Excel.
  + Cleaned data by handling missing values, removing duplicates, and standardizing formats.
  + Exported processed dataset for visualization.

1. Data Modeling in Power BI
   * Established relationships between demographic, service usage, and churn fields.
   * Created measures like churn rate and customer distribution.
2. Dashboard Design
   * Added KPI cards (average calls, SMS, data usage, total customers, churned customers, churn rate).

o Designed charts for churn analysis by salary, age, gender, tenure, and telecom partner.

* + Added a map to display churn distribution across states.

1. Insights Generation

* Identified customer groups with the highest churn probability.

o Compared churn by telecom partners to evaluate competitive risks.

* + Tracked churn trends over time for stability.

# **Conclusion**

The churn analysis project provided meaningful insights into customer behavior in the telecom industry. The study highlighted that churn is higher among mid-aged customers, high-income groups, and users of specific telecom partners.

Such findings enable companies to:

* Implement targeted retention strategies for high-risk groups.
* Offer personalized plans and discounts to valuable customers.
* Continuously monitor churn patterns with Power BI dashboards.

By combining Excel for preprocessing and Power BI for visualization, this project demonstrates an effective approach to understanding and mitigating customer churn.

**Thank You**