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## **Analytical Problem Statement for BI Engineer**

### **Problem Title:**

### **Customer Churn and Revenue Retention Analysis for a Telecom Operator**

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### **Business Context:**

A telecom operator in the GCC region is observing a gradual decline in active subscribers over the past three quarters. The management suspects that customer churn and ineffective retention strategies are impacting both revenue and long-term customer value. They have tasked the BI team with identifying churn drivers, evaluating the effectiveness of existing offers, and presenting actionable insights to reduce churn and improve customer retention.

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### **Objective:**

You are tasked with building a BI solution to:

1. Identify churn patterns among prepaid and postpaid customers.
  2. Analyse revenue impact from churned customers over the last 12 months.
  3. Evaluate the performance of various customer offers and campaigns.
  4. Develop and present a dashboard with clear storytelling to guide business decisions.
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### **Available Data Points:**

- **Customer Master Data:**
  - Customer ID, Type (Prepaid/Postpaid), Join Date, Termination Date (if any), Age, Region, Segment (Premium/Mass/Youth)
- **Usage Data:**
  - Monthly voice minutes, data usage (GB), number of SMS sent, roaming usage
- **Recharge / Billing Data:**
  - Recharge amount (Prepaid), Monthly bill amount (Postpaid), Payment method, Payment timeliness

- **Offer/Campaign Data:**
    - Campaign ID, Start/End Date, Offer type (Discount/Data booster/Combo), Target segment, Redemption rate
  - **Customer Support Data:**
    - Number of support calls, Complaint category, Resolution time
  - **Churn Flag (Yes/No)**
    - Defined as no activity (calls/data/recharge) for 90+ days
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## **Expected Deliverables:**

### **1. Problem Understanding & Assumptions**

- Define what constitutes churn and revenue loss
- Identify KPIs to be tracked

### **2. Data Modelling**

- Design a simplified data model (ERD or star schema) suitable for BI visualization
- Suggest any calculated fields or aggregated measures

### **3. Visualization Development**

- Build mock-ups or actual dashboards (Power BI, Qlik, or any open source BI tool) with the following views:
  - Churn trend by month and customer segment
  - Revenue at risk due to churn
  - Offer redemption impact on churn reduction
  - Regional heatmap of churn
  - Customer support vs. churn correlation

### **4. Storytelling & Presentation**

- Present your findings and recommendations to a non-technical audience
  - Use the dashboard to walk through key insights
  - Propose 2-3 actionable recommendations for improving retention
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**Evaluation Criteria:**

- Clarity of assumptions and problem interpretation
- Data Quality checks and metadata understanding.
- Logical and scalable data modelling
- Insightful and intuitive dashboard design
- Communication and storytelling effectiveness
- Creativity and business acumen in recommendations

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Required datasets are provided to accompany this exercise.