

# Credit Card Analysis

## Business Problem:

The company is seeking to enhance its credit card business by gaining a deeper understanding of customer behavior, preferences, and lifetime value. The current lack of actionable insights into customer data is hindering the ability to effectively acquire new customers, retain existing ones, and maximize profitability.

## Tasks:

- **Improve customer acquisition:** Identify target customer segments and develop effective marketing strategies to attract new customers.
- **Enhance customer retention:** Analyze customer churn and implement strategies to retain high-value customers.
- **Maximize profitability:** Optimize product offerings, pricing, and cross-selling initiatives to increase revenue and profitability.
- **Gain competitive advantage:** Leverage data-driven insights to differentiate the company from competitors and provide superior customer experiences.
- **Support strategic decision-making:** Provide the necessary information for informed decision-making regarding marketing, product development, and customer relationship management.

By addressing these challenges, the company can improve its overall financial performance, strengthen customer relationships, and achieve sustainable growth in the competitive credit card market.

### **1. Data Acquisition and Cleaning:**

- Collected credit card transaction data, customer demographics, and product usage information from multiple sources.
- Cleaned and prepared the data by handling missing values, inconsistencies, and outliers.

### **2. Data Modeling:**

- Created a data model in Power BI to establish relationships between different entities (e.g., customers, transactions, products).
- Implemented measures to calculate key performance indicators (KPIs) such as customer lifetime value, average transaction value, and churn rate.

### **3. Data Visualization:**

- Developed interactive dashboards and reports using Power BI to visualize key insights.
- Utilized various chart types (e.g., bar charts, line charts, pie charts) to represent different data dimensions.
- Implemented filters and slicers to enable interactive exploration of the data.

#### 4. Analysis and Insights:

- Conducted in-depth analysis to identify trends, patterns, and correlations within the data.
- Generated actionable insights to inform business decisions.

#### Methodology (Power BI)

- **Data Import:** Imported the cleaned data into Power BI using the Power Query Editor.
- **Data Transformation:** Cleaned, transformed, and enriched the data using Power Query.
- **Data Modeling:** Created a star schema data model to establish relationships between tables.
- **Measure Creation:** Developed measures to calculate KPIs and perform aggregations.
- **Visualization:** Created interactive dashboards and reports using various chart types.
- **Data Analysis:** Utilized DAX functions and calculations to perform advanced data analysis.

#### Insights Generated

##### Customer Segmentation:

- **Demographic Segmentation:** Identified key customer segments based on age, gender, income group, marital status, and education level.

- **Product Usage:** Analyzed customer preferences for different card types, transaction channels, and product features.
- **Behavioral Segmentation:** Segmented customers based on spending patterns, transaction frequency, and loyalty metrics.

### **Customer Lifetime Value (CLTV):**

- **High-Value Customers:** Identified customers with the highest CLTV, representing a significant source of revenue.
- **Churn Analysis:** Analyzed customer churn rates to identify factors contributing to customer attrition.

### **Product Performance:**

- **Product Profitability:** Assessed the profitability of different card products and identified opportunities for optimization.
- **Cross-Selling Opportunities:** Identified potential cross-selling opportunities based on customer behavior and product usage.

### **Geographic Analysis:**

- **Regional Performance:** Analyzed sales performance across different regions to identify growth opportunities.
- **Customer Concentration:** Identified regions with high customer concentrations and potential for targeted marketing efforts.

## **Recommendations**

- **Targeted Marketing:** Develop personalized marketing campaigns based on customer segments to improve acquisition and retention rates.
- **Customer Loyalty Programs:** Implement loyalty programs to reward high-value customers and encourage repeat business.
- **Product Optimization:** Optimize product offerings based on customer preferences and profitability analysis.
- **Cross-Selling Initiatives:** Develop effective cross-selling strategies to increase average transaction value and customer satisfaction.
- **Geographic Expansion:** Focus on regions with high growth potential to expand the customer base.
- **Churn Prevention:** Implement strategies to address customer churn, such as personalized outreach and targeted retention programs.

By leveraging these insights and recommendations, the company can enhance customer relationships, drive revenue growth, and optimize the overall credit card business.