

Customer Churn Prediction Using Machine Learning



Introduction to Customer Churn Prediction

01 Data Analysis

01

Utilizing customer data to identify patterns in behavior that indicate potential churn.

02 Retention Strategies

02

Developing targeted marketing strategies based on churn predictions to retain valuable customers.

03 Resource Allocation

03

Optimizing customer service resources by focusing on at-risk customers identified through predictions.

04 Continuous Improvement

04

Regularly updating the prediction model to incorporate new data and improve accuracy over time.



Purpose of the Prediction Model



Data Analysis

To leverage machine learning to enhance customer satisfaction and retention rates effectively.

Mission

To develop predictive analytics that identifies potential churn customers and offers timely interventions.

Values

Commitment to continuous improvement through data-driven decisions and customer-centric strategies.

Scope of the Customer Churn Project



Data Analysis

Perform exploratory data analysis to identify churn patterns.

Model Development

Utilize machine learning algorithms for churn prediction.

Feature Engineering

Create relevant features based on customer behavior data.

Validation Process

Implement cross-validation techniques to ensure model accuracy.

Implementation Strategy

Deploy the model into the production environment effectively.

User Feedback

Collect feedback to refine predictions and improve accuracy.

Vision and Mission of the Analysis

Vision



To leverage machine learning for innovative customer churn prediction solutions that enhance retention.

Mission



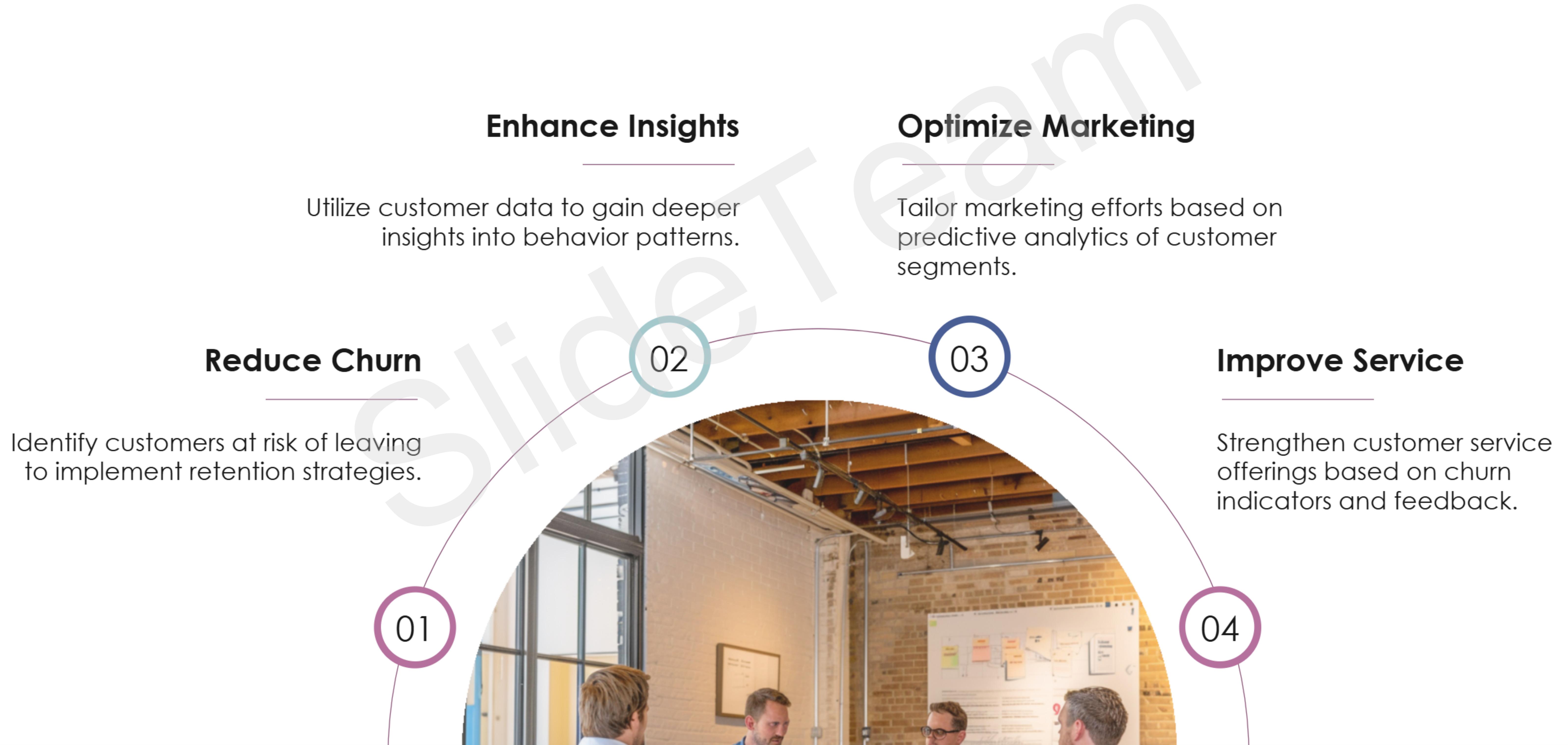
To develop an intelligent system that accurately predicts customer churn using advanced machine learning algorithms.

Goals



To minimize customer attrition rates by providing actionable insights through predictive analytics.

Objectives of Customer Churn Prediction



Problem Statement for Customer Churn



Problem 1

High customer turnover leading to revenue loss for businesses

Increased marketing costs to acquire new customers

Diminished customer lifetime value impacting profitability

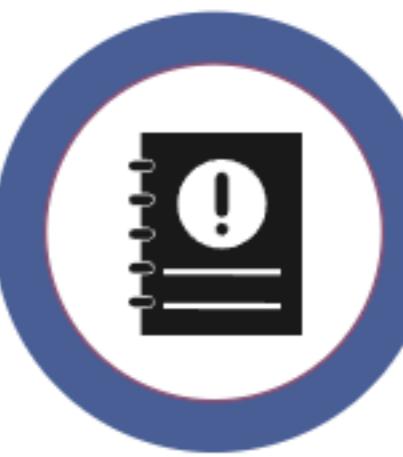


Problem 2

Difficulty in identifying at-risk customers in the database

Lack of predictive analytics tools for early detection

Inefficient methods to analyze customer behavior patterns



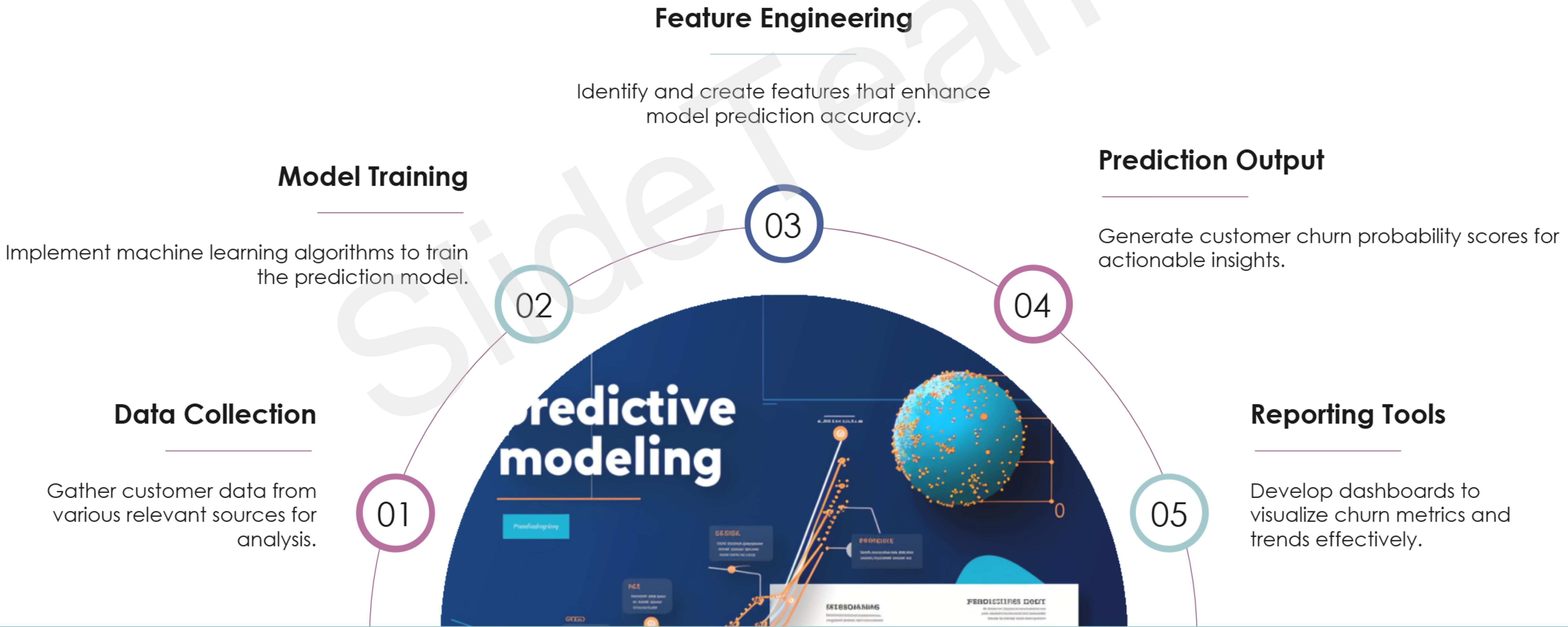
Problem 3

Inability to implement effective retention strategies for customers

Limited understanding of customer needs and preferences

Poor communication channels leading to customer dissatisfaction

Functional Requirements for the Model



Non-Functional Requirements Overview

Reliability

01

The system must ensure that predictions are consistently accurate and resilient under various operating conditions to avoid loss of customer trust.

Scalability

02

The prediction model should accommodate increasing amounts of data without compromising performance or response time as business grows.

Usability

03

The interface for stakeholders must be intuitive, ensuring ease of navigation and understanding of the churn prediction results and insights.



Domain Requirements for Churn Prediction

Requirement Type	Details	Verification	Impact
Functional Requirements	Predict churn probability	Machine Learning model	Test suite
Non-Functional Requirements	System performance	95% uptime	Monitoring tools
Domain Specific	Customer insights	Segmentation strategies	Business reviews
Data Requirements	Data integrity	Accuracy of data	Regular audits

01

02

03

Summary Points

Retention Rate

Cost Savings

User Engagement

Churn reduction by 30% through predictions.

Avoided costs of 20% in retention efforts.

Increased usage by 15% from personalized offers.



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Thank You

