

Customer Price Awareness: A Case Study

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Problem Identification & Exploration Process

Problem Statement: Customers in Alberta with more than one active TELUS service are unaware of the recent Mobility service price increase despite being notified via SMS 6 weeks prior.

Exploration Process:

1. Data Collection & Integration:

- a. Collect Data: Gather data on all sent SMS notifications, delivery reports, and customer call logs.
- b. Integrate Data: Use SQL and Python to merge datasets (e.g., customer profiles, SMS delivery data & logs).

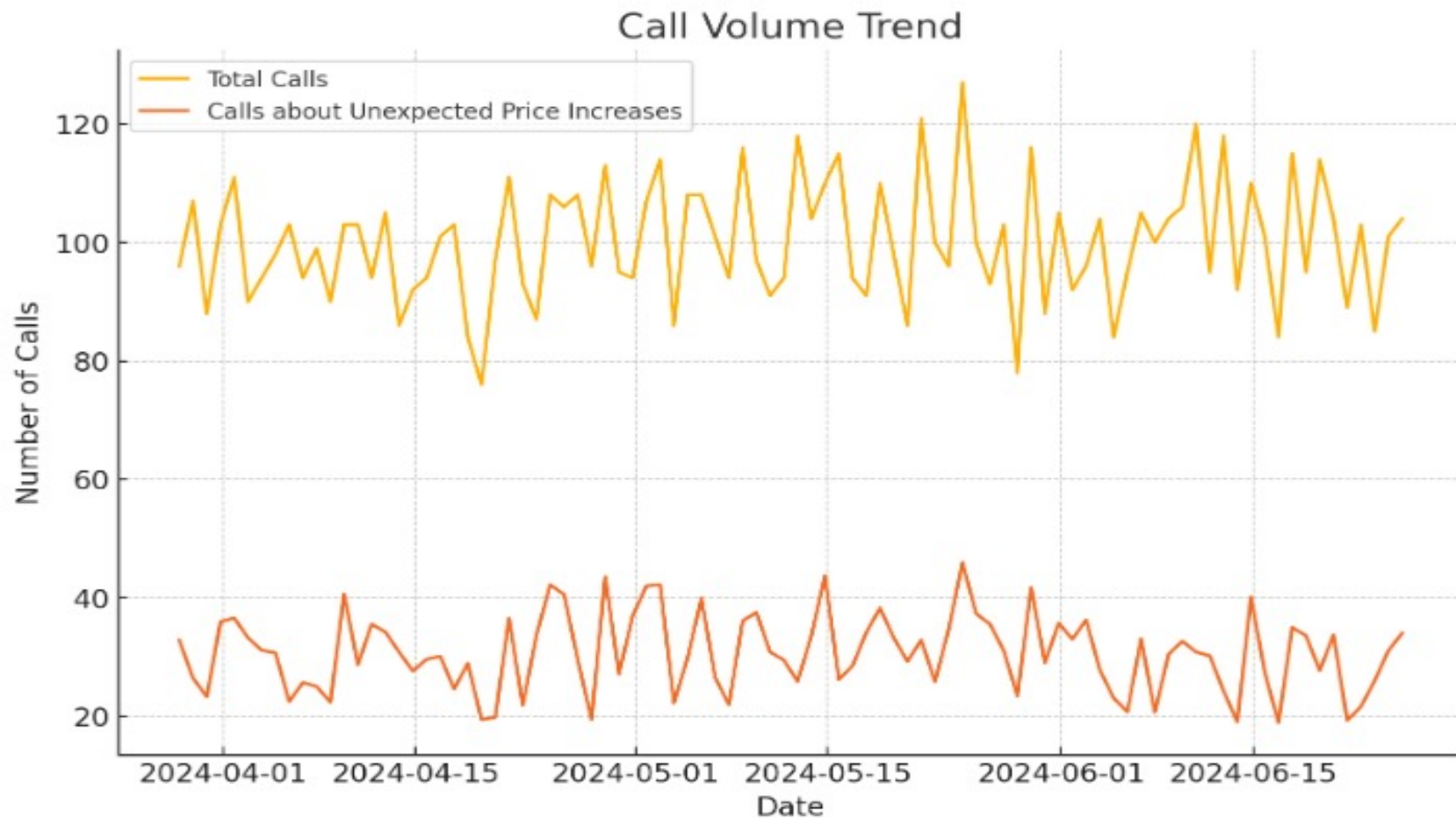
2. Data Analysis:

- a. EDA (Exploratory Data Analysis): Utilize data science libraries (e.g., Pandas, Matplotlib) to identify patterns in customer complaints.
- b. Sentiment Analysis: Perform NLP analysis on call logs to understand customer sentiment and common issues.

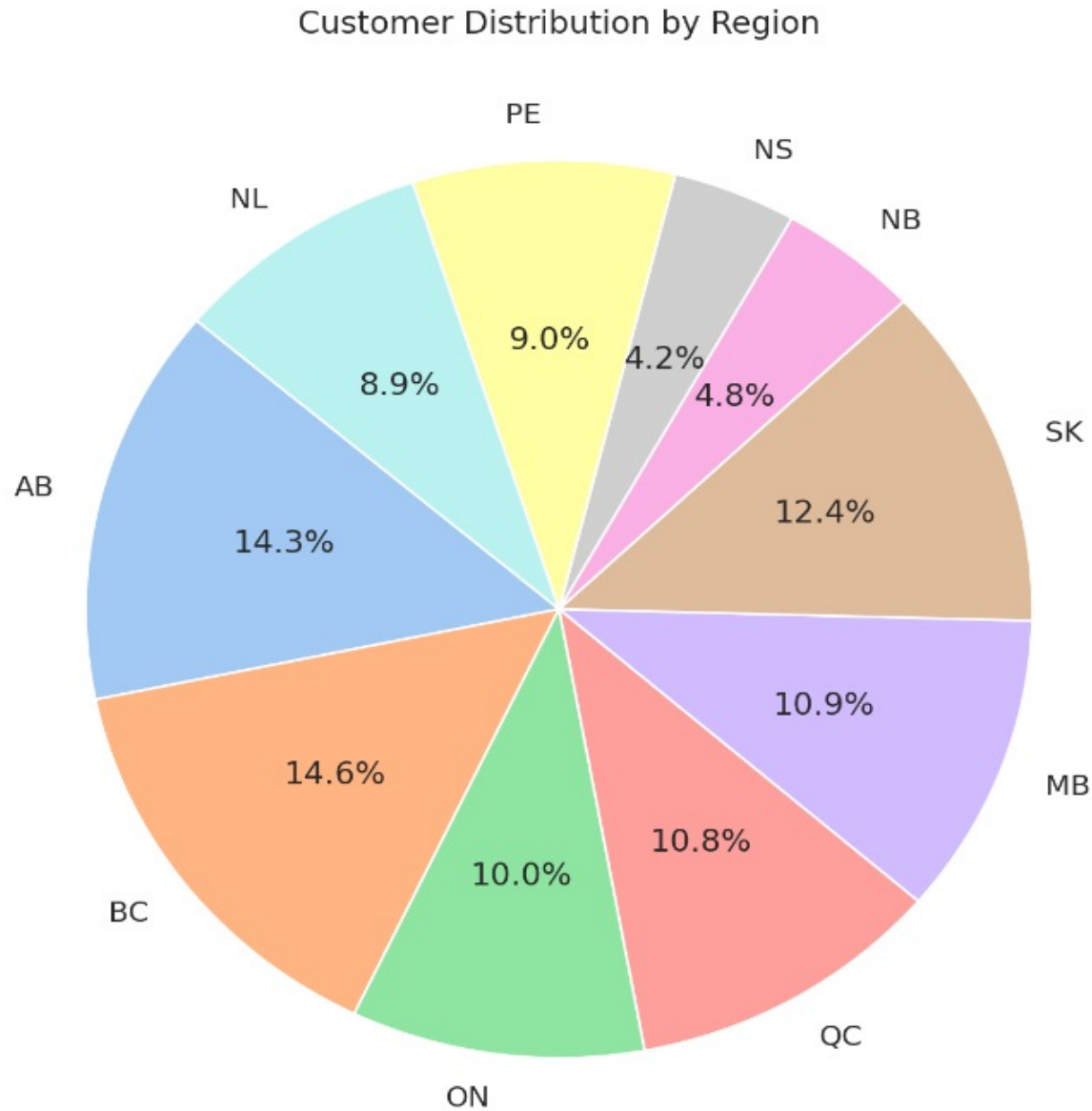
3. Hypothesis Testing:

- a. SMS Delivery Issues: Investigate if SMS notifications were delivered successfully. Disparity in SMS Delivery for AB Customer?
- b. Customer Segmentation: Analyze if certain customer segments (e.g., multiple services, region-specific) are more affected.

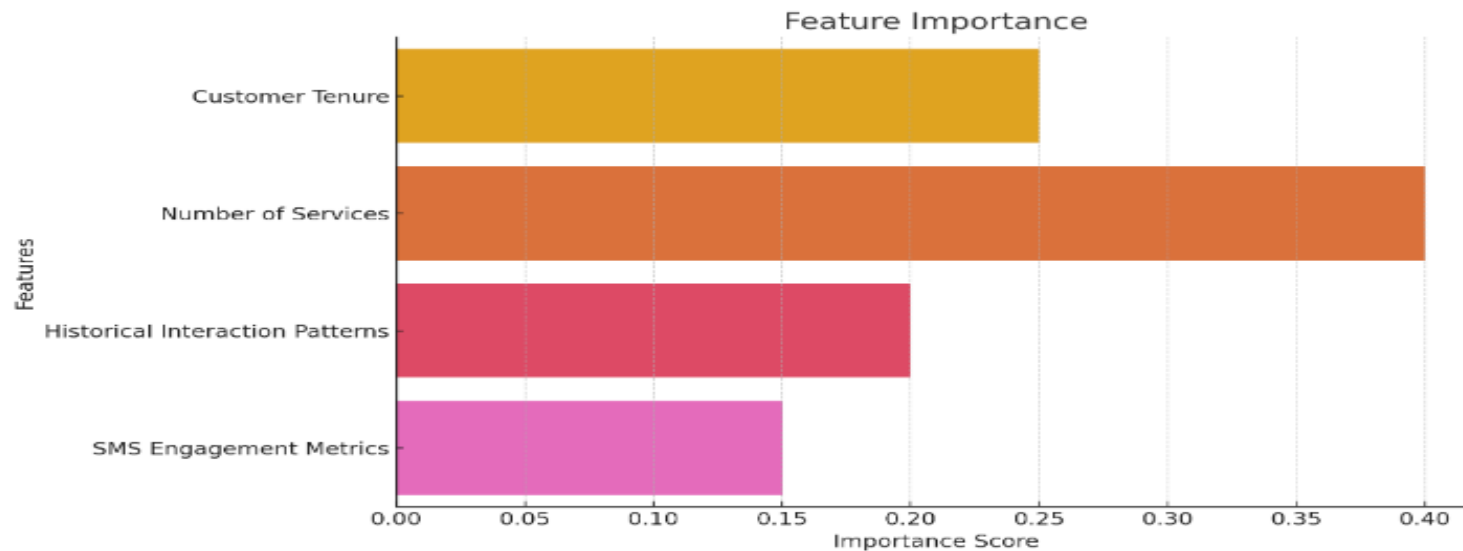
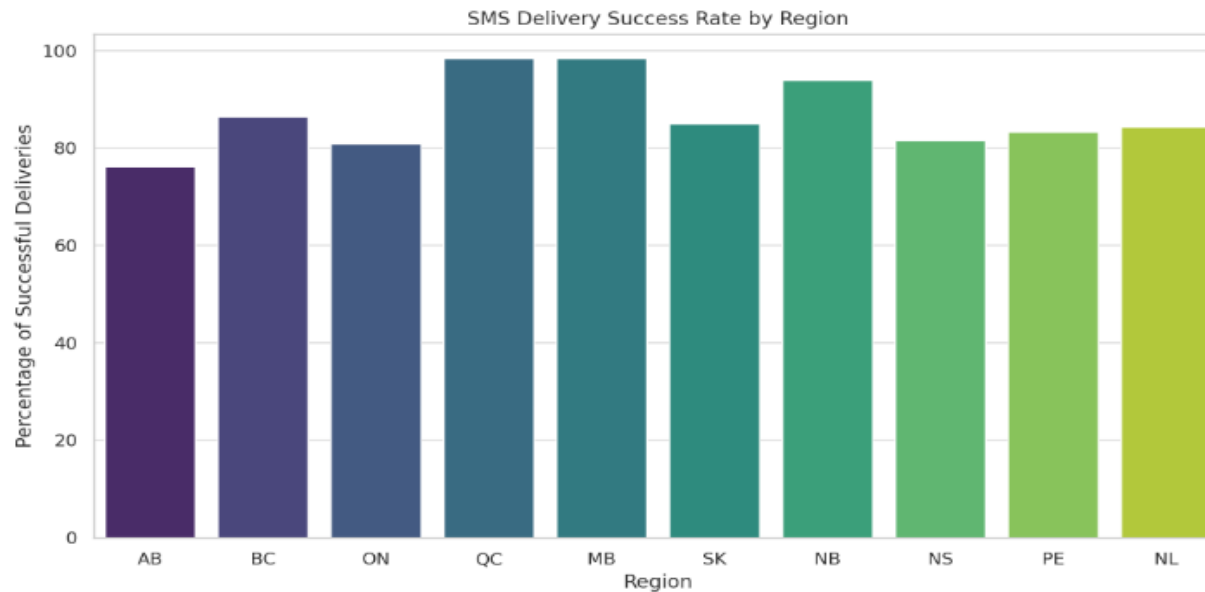
Sudden Influx in Call Volume June 2024



Telus Customer Distribution by Region



Key Data Insight: Customers Who Were Affected



PoC: Proposed Solution

1. Multi-Channel Notification Strategy:

- a. SMS, Email, App Notifications: Ensure redundancy in communication by sending notifications via both SMS, email & My Telus App.
- b. Customer Portal Alerts: Display price increase alerts prominently on the My Telus App.
- c. Augmented Reality (AR) Notifications: Use AR technology to send interactive notifications that customers can view on My Telus App using their smartphones. This can include visual explanations of the price increase.
- d. Voice Assistants: Integrate notifications with popular voice assistants like Alexa and Google Assistant to provide audible reminders of the upcoming price changes.

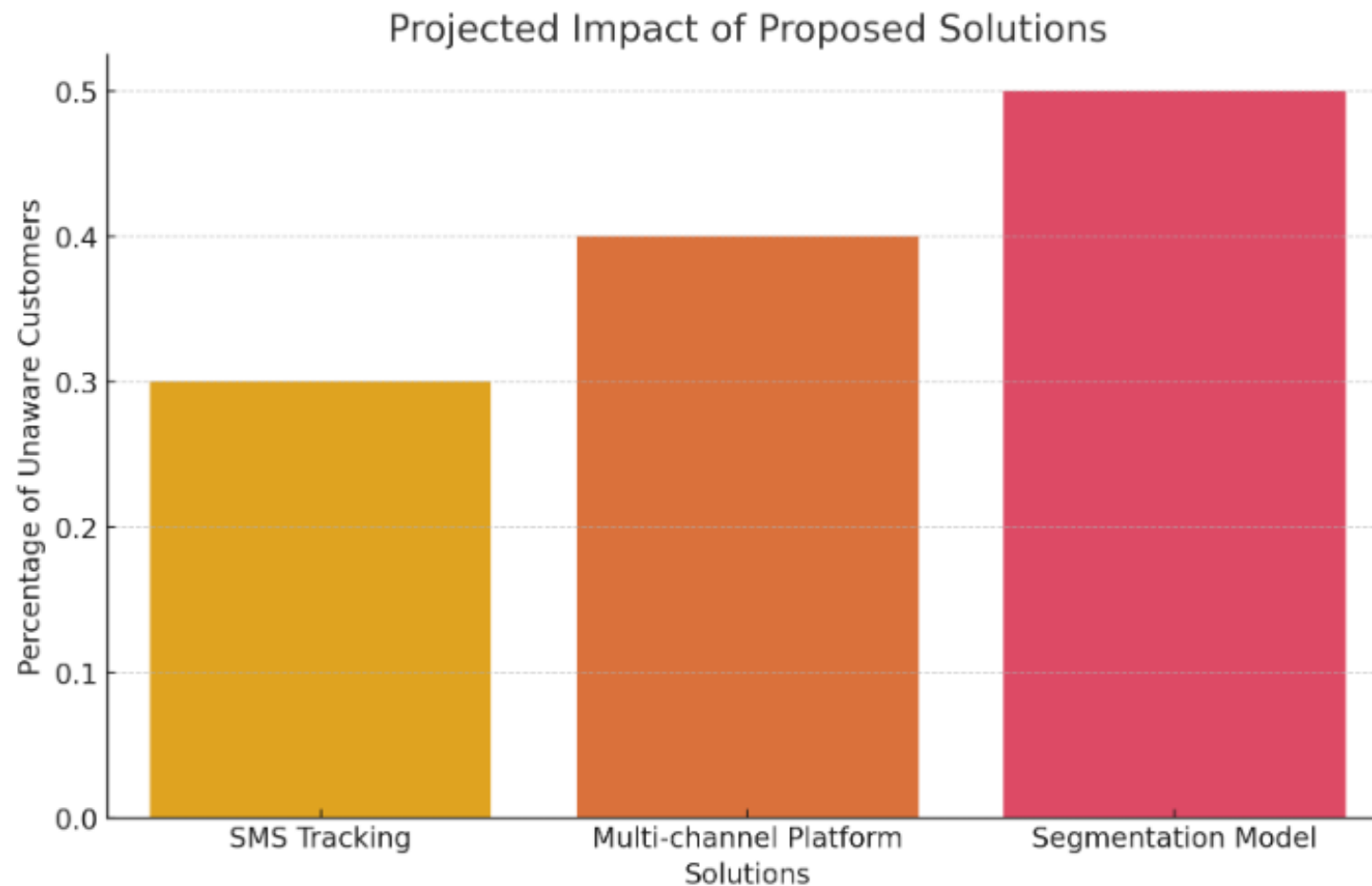
2. Personalized Communication:

- a. AI-Powered Personalization: Leverage AI to tailor notifications based on customer preferences on My Telus App.
- b. Behavioral Nudges: Use behavioral science principles to craft messages that effectively capture attention and prompt customers to take action (e.g., confirming they have read the message).

3. Enhanced Customer Interaction:

- a. Interactive Chatbots: Deploy chatbots in My Telus App that can answer questions about the price increase and provide additional information through natural language conversations.
- b. Gamification: Introduce gamification elements in notifications (e.g., quizzes or challenges related to the price increase) to engage customers and ensure they are aware of the changes.

Proposed Solution Projected Impact



POC Implementation

Technical Implementation:

1. Data Pipeline Enhancement:

- a. Build Pipelines: Create robust data pipelines using cloud platforms to ensure seamless integration and delivery of notifications.
- b. Automate Notifications: Implement automation for sending multi-channel notifications using APIs and cloud functions.

2. Monitoring & Feedback Mechanism:

- a. Real-Time Monitoring: Use cloud-based monitoring tools (e.g., Google Cloud Monitoring) to track delivery and open rates of notifications.
- b. Feedback Integration: Develop a feedback loop to capture customer responses and continuously improve the notification process.

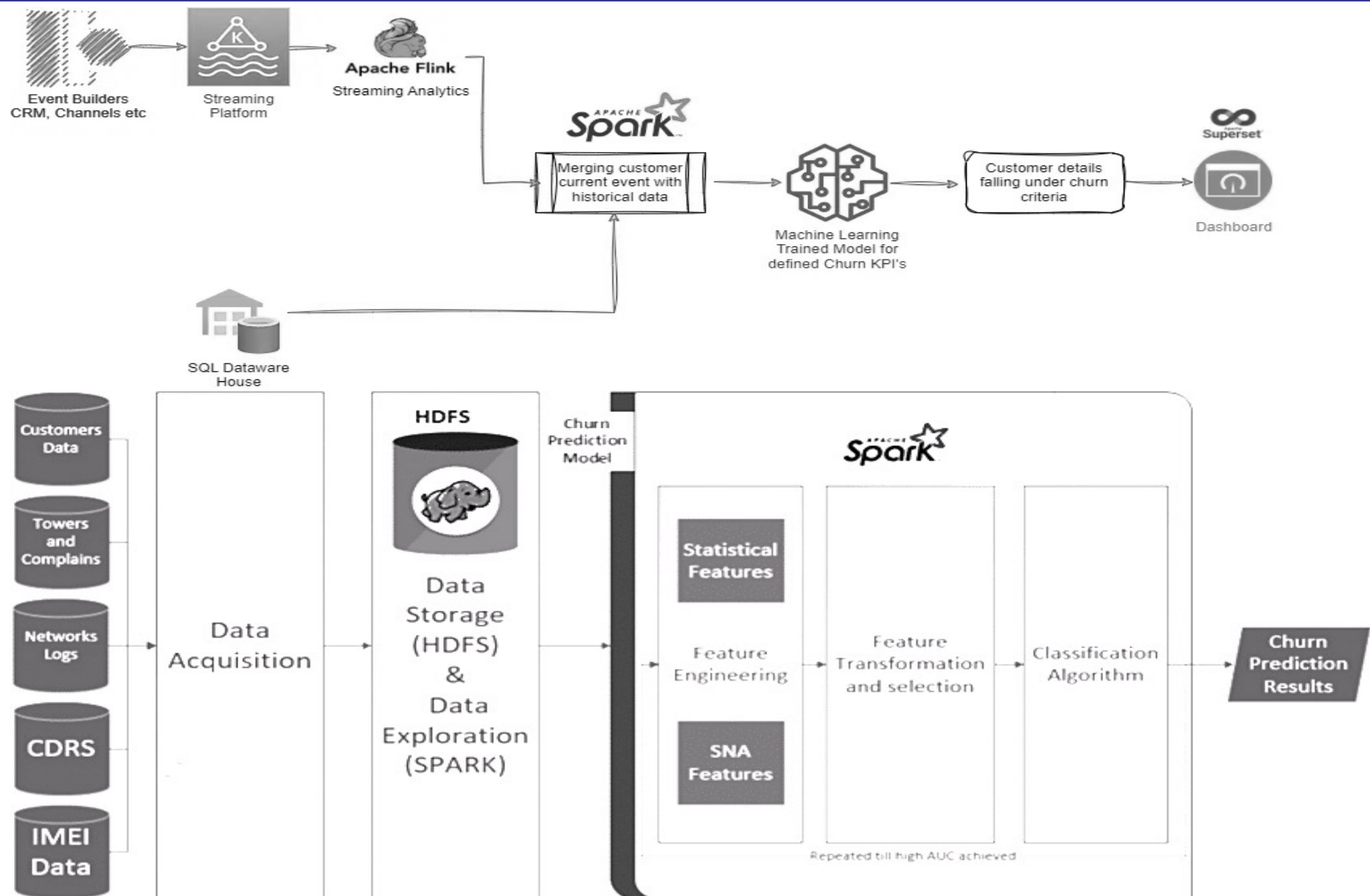
3. Machine Learning Insights:

- a. Predictive Analysis: Use ML models to predict which customers are likely to miss notifications and proactively send reminders.
- b. Anomaly Detection: Implement ML-based anomaly detection to identify and address any issues in the notification process.

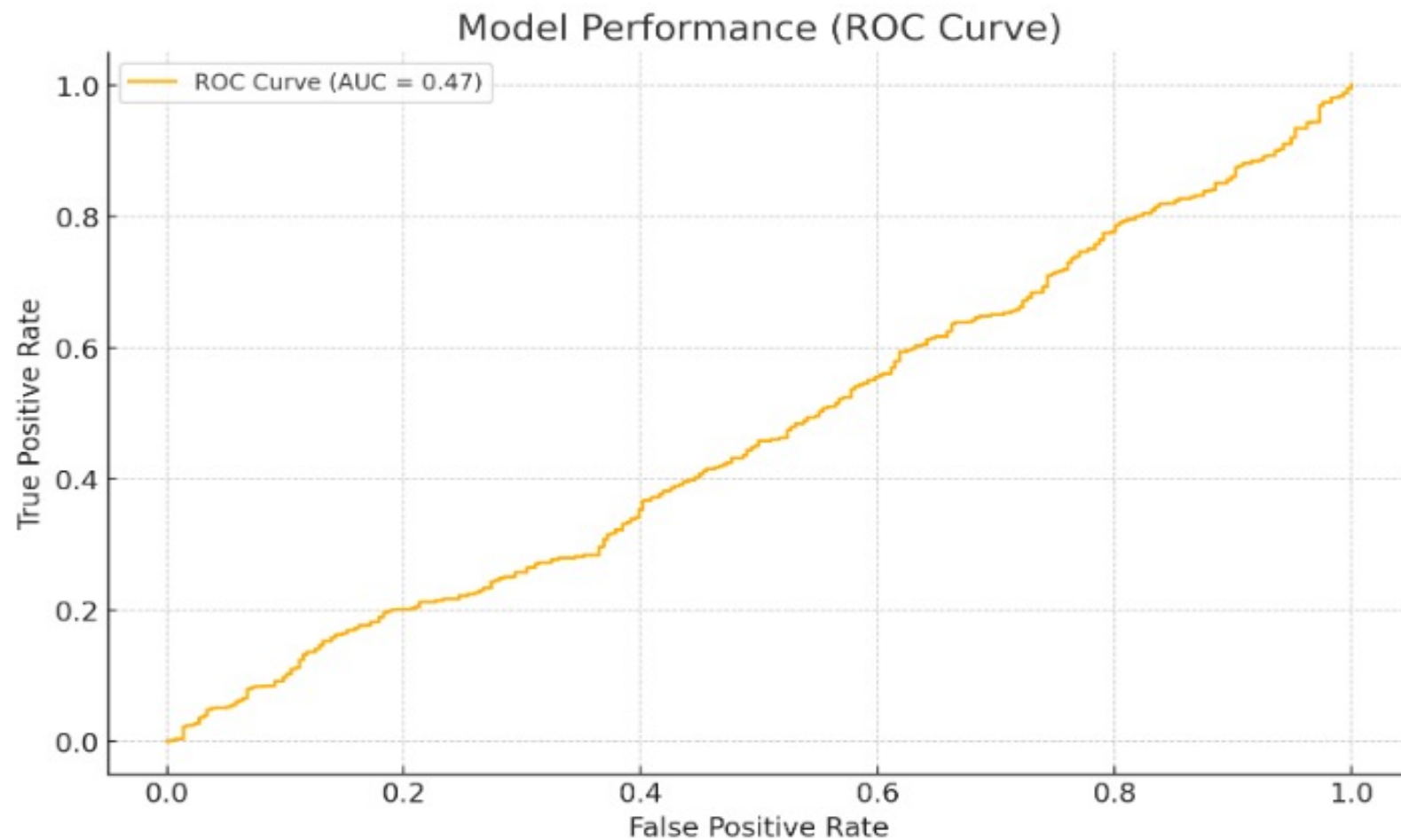
Collaborative Efforts:

- Cross-Functional Teams: Work with marketing, IT, and customer service teams to ensure a cohesive approach to customer communication.
- Stakeholder Buy-In: Present the POC to stakeholders and secure alignment on the implementation roadmap.

POC Model Architecture



Proposed Model Performance



Expected Outcomes & Next Steps

Expected Outcomes:

- 1. Increased Customer Awareness:** Higher visibility and acknowledgment of price increases through multi-channel notifications.
- 2. Reduced Call Volume:** Fewer customer complaints and calls related to unawareness of price changes.
- 3. Enhanced Customer Satisfaction:** Improved customer experience and satisfaction by ensuring timely and clear communication.

Next Steps:

1. Pilot Program:

- a. Launch Pilot:** Implement the multi-channel notification strategy in a small customer segment to test effectiveness.
- b. Gather Data:** Collect data on notification delivery, open rates, and customer feedback during the pilot phase.

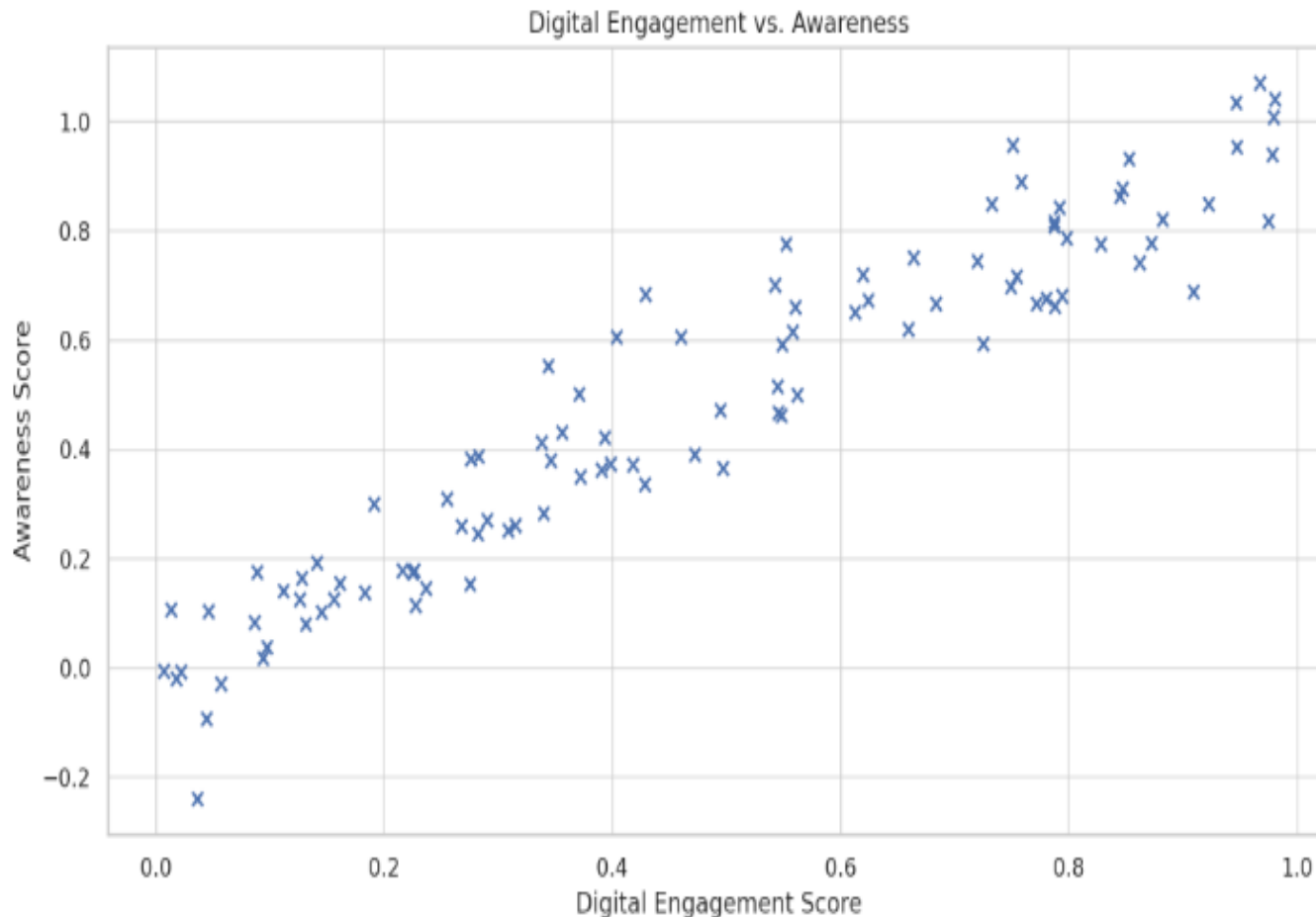
2. Full-Scale Implementation:

- a. Roll Out:** Expand the implementation across all customer segments based on pilot results.
- b. Continuous Improvement:** Use machine learning insights and customer feedback to refine and optimize the notification process.

3. Ongoing Monitoring:

- a. Performance Tracking:** Continuously monitor the effectiveness of the notification strategy using cloud-based tools.
- b. Regular Updates:** Provide regular updates to stakeholders on the progress and outcomes of the implemented solution.

Digital Engagement Score



Why are customers unaware of price increases?

Why 1: They didn't receive the SMS

Why 2: Lower delivery rate in AB

Why 3: Carrier issues specific to AB

Why 1: They received but didn't read the SMS

Why 2: Low engagement with Mobility communications

Why 3: Information overload for multi-service customers

Challenges and Future Enhancement

➤ **Challenges:**

- Potential customer turnover
- Competitor offers and aggressive marketing

➤ **Future Enhancements:**

✓ **Immediate Actions (1-2 Weeks)**

- Proactive Communication: (Develop AI System to identify at risk customers)

✓ **Short Term Actions (3-4 Weeks)**

- Value Added Services: (Loyalty Program Benefits for long term customers)

✓ **Medium Term Actions (2-3 Months)**

- Flexible Pricing Options: (Deploy ML for usage patterns/ Deploy Build your own bundle)

✓ **Long Term Actions (4-6 Months)**

- Customer Feedback Loop: (Deploy NLP for Sentiment Analysis)
- Retention Focused Customer Service: (Deploy Chatbot using Conversational AI)
- Competitive Analysis: (Monitor competitor offers in real time & generate counter offers). Use time series to predict future trends.

Solution Stack

❖ Technology Stack:

- **GAN: (TextGAN, PyTorch)**
- **Database: (SQL)**
- **Machine Learning: (scikit-learn, PySpark)**
- **Cloud: (GCP BigQuery, Apache Airflow), Version Control (Git)**
- **Data Processing and Visualization: (pandas, numpy, matplotlib, seaborn)**
- **Containerization: (Docker, Kubernetes),**
- **Backend API: (Flask)**

❖ Framework Stack:

- **DMAIC: (State, Quantify, Identify, Solution, Monitor)**
- **DDDM Framework: (Identify, Collect, Analyze, Interpret, Decision)**
- **CRISP-DM: (Cross-Industry Standard Process for Data Mining)**
- **5 WHYs & 7S Framework:**
- **SWOT Analysis:**
- **Customer Journey Mapping:**

GitHub Code Repository

GitHub Repository

[<https://github.com/tanveermemon92/TELUS-L4.git>]



Scan Me

- Code Access:** The entire codebase, is available in the repository.
- Implementation Details:** Detailed README file provides instructions for installation & usage.
- Executable Prototype:** Clone the repository and follow the instructions to run the prototype locally.