RESEARCH PROPOSAL - TEAM 5

Problem Statement:

Mint Mobile experiences high customer churn rates among university students, affecting its revenue and competitive position in the telecom industry.

Research Aim:

The aim of this research is to analyze different factors contributing to customer churn and provide remedies and recommendations to Mint Mobile for improving customer retention.

Objectives:

- To assess the impact of factors that influence customer churn the most, as determined by analyzing the Kaggle dataset.
- To create focused solutions that boost client retention and the entire customer experience.

Methods to be Used for Analysis:

The project would use a combination of qualitative and quantitative data.

1. Quantitative data

We plan to use the Kaggle dataset (secondary source, telecom industry dataset) to perform preliminary data analysis for identifying the factors that mostly influence the churn of customers. The dataset will provide correlations between different factors and customer churn. The main factors identified from the preliminary analysis would be considered a basis for collecting primary data by conducting surveys and interviews.

2. Qualitative data

The analysis of quantitative data would serve as a framework for designing a survey for the collection of primary data. It would be filled by college students from the University of Washington and other universities across the US. This would help confirm the hypothesis of how accurate the IBM data is to the behavior of the university students and help us understand the reasoning behind the user behavior.

Once we have collected the survey responses, we will analyze the data through a combination of visualization and modeling techniques. Based on the insights we get, we

will provide actionable recommendations to Mint Mobile, enabling them to improve their customer retention and the overall customer experience.

Planned and possible data sources:

We have opted for a combination of primary and secondary data collection methods. Our secondary data collection method involves the use of the Kaggle dataset. This dataset is created by IBM which gives general industry trends for all age groups. We will be using this secondary dataset to identify the top three features that demonstrate the highest correlation with customer churn. The survey will incorporate the key features identified in our preliminary analysis and other relevant factors specific to university students, our target audience.

The rationale for using a survey as our primary data collection method is to gain insight into the perceptions and attitudes of university students towards telecom services and their likelihood of switching to a different provider. Our survey questions will be designed to capture this information, and we will use various techniques, such as customized surveys, and skip logic for different user types to obtain comprehensive responses. We aim to get more than 50 responses to our survey for downstream analysis.

Our sample data may not be representative of the entire university student population, but it will provide behavioral insights for the majority. We also acknowledge any potential data quality biases arising due to data collection methods, sample size, and the demographics of participants. We will be taking the necessary steps to mitigate these by collectively drafting our survey, doing a pilot survey, and including students of diverse gender, age group, ethnicity, and stream.

Subject selection and sampling procedure/rationale for participant recruitment:

The study will use stratified sampling to categorize participants from diverse demographic backgrounds, including individuals of different nationalities (international and non-international students), different universities, and different educational levels (undergraduate, graduate, and Ph.D.).

We plan on conducting this survey with three groups of university students:
1) Students that are currently using Mint Mobile services
2) Students who have used Mint Mobile services in the past
3) Students who have never used Mint Mobile services before.

The survey will use skip logic to have customized questions for the above three groups of university students. Each group will provide us with a deeper understanding of different aspects. like, the reasons customers choose the service provider, their motivations to leave, and their reasons for choosing other providers over Mint Mobile.

Timeline and the steps you will undertake to complete your research:

Timeline	Task
April 11 - 17	Topic Finalization & Market Research
April 17 - 22	Completed EDA on existing Kaggle Data to obtain top features to focus on and build our research on
April 22 - 26	Design Survey Questions
April 26 - 30	Survey Pilot with 3 individuals
May 1- 4	Refining Survey Questions and Rolling out the survey to the wider audience for data collection
May 4	Project Report Presentation
May 5 -17	Analyze the collected qualitative and quantitative data to find patterns and insights to build upon recommendations for Mint Mobile
May 17 - 28	Curate Research Report and Presentation

Ethical Considerations:

Survey Participant Privacy
We plan not to include any personal information like name, identification number, gender, or pronouns in the survey.

Biases
Since the participants of the survey would be mostly students from the University of Washington as compared to those from other universities, there may be potential biases. This could be due to brand image, word of mouth in the students' community, carrier services on the university campus, etc.

Limited Scope

Since we are analyzing the influence of only three factors, our research is limited in scope, and the recommendations are not comprehensive. The boundary of research is clearly defined, and results should not be used to improve the overall retention rate (influenced by many other factors as well) of Mint Mobile users.

Risk Mitigation Plan:

1. We will combine qualitative and quantitative data collection techniques to reduce the possibility of biases in data, and carefully craft our survey questions to steer clear of any leading questions.
2. We will use a variety of recruitment techniques, such as providing incentives and utilizing social media to boost awareness and participation, to mitigate the risk of poor survey response rates.
3. We will utilize secure data storage and processing techniques to preserve the security and anonymity of our participants, and we will ensure to get their informed consent before collecting their data.
4. We will carefully choose our sample size and employ suitable statistical analysis techniques to verify the validity and reliability of our findings in order to reduce the danger of incomplete data or incorrect results. In order to confirm the validity and correctness of our research, we will also engage with professionals in the area.

References:

Telco Customer Churn. (n.d.). Telco Customer Churn | Kaggle.
https:///datasets/blastchar/telco-customer-churn