Task 2: Requirement Gathering

Requirement gathering is crucial for user-centered application development. This task systematically collects and analyzes user needs and challenges related to mobile network performance in Cameroon.

Given the inconsistent network services from major providers like MTN, Orange, and Camtel, there is a demand for an application that monitors, reports, and improves user network experiences. The insights from this process will inform the functional and non-functional requirements of the proposed solution, ensuring it meets user expectations and is based on real-world data.

by Group 23

Abstract

This report outlines a structured approach to gather requirements for a mobile app designed to monitor and report mobile network performance in Cameroon. The app addresses issues like fluctuating signal strength and inconsistent bandwidth. Key stakeholders were identified, and data was collected through surveys, interviews, and qualitative analysis, ensuring a user-centered design that reflects real needs.

Findings show strong user interest in the app, particularly for features like real-time signal monitoring, issue reporting, and low data/battery usage. The results of this requirement gathering will inform the app's design and development, ensuring the final product is practical and meets user expectations.

Stakeholder Identification

Mobile Network Users

The primary stakeholders who will use the app to report and monitor their network performance. Their feedback, experiences, and preferences are central to the development of the application.

Telecommunication Providers (MTN, Orange, Camtel)

Secondary stakeholders whose service quality is evaluated. They can potentially use this data to improve their network infrastructure and service.

App Developers and UX Designers

Responsible for transforming user needs into a working, intuitive mobile application. Their role includes feature development, UI/UX optimization, and maintenance.

Data Analysts

Tasked with interpreting collected data to understand user behavior, satisfaction, and network performance trends.

Requirement Gathering Techniques

Surveys

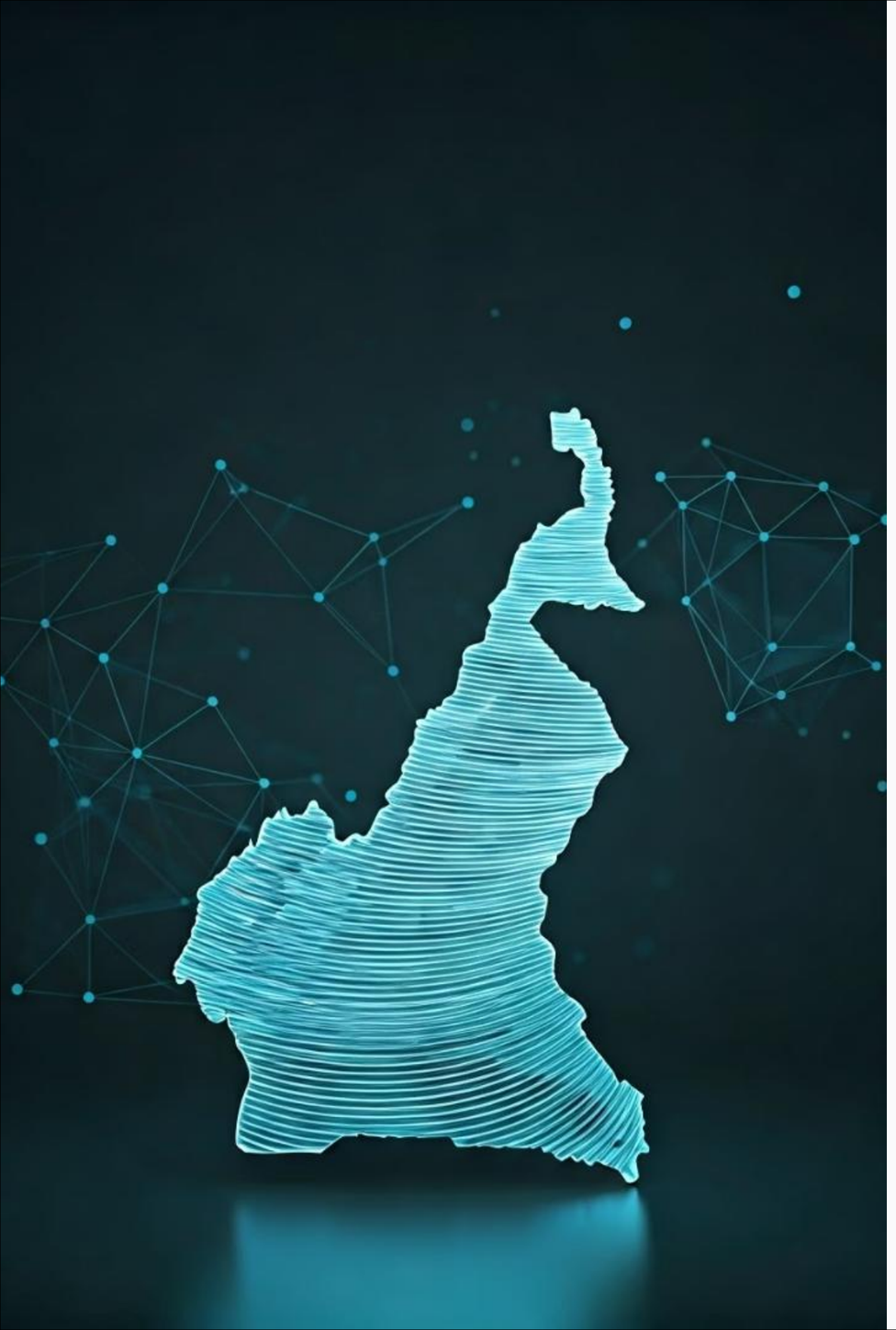
A structured survey was administered to gather user demographics, network usage patterns, issues encountered, satisfaction levels, and interest in a potential app. The data was collected from 65 respondents across different age groups and cities.

Interviews and Open-Ended Feedback

Though primarily survey-based, a section of the survey allowed for open-ended responses. These qualitative responses provided insights into specific pain points and user suggestions.

Brainstorming

Internal brainstorming sessions were conducted among the research and development team to hypothesize potential features and analyze feasibility based on the feedback collected.



Data Gathering

Demographics

Mobile Network

Connection Type

Network Issues

Survey data was collected through an online form that included both multiple-choice and open-ended questions. Key aspects covered include age, gender, and location demographics, mobile network(s) used (MTN, Orange, Camtel), type of phone and internet connection (mostly 4G), frequency and type of network issues, satisfaction with network performance, interest in using an app for reporting network experience, desired app features, and privacy concerns.

Data Cleaning

1

Removal

Removal of incomplete or inconsistent entries.

2

Standardization

Standardization of categorical responses (e.g., converting variants of "Camtel" or "MTN" into uniform terms).

3

Grouping

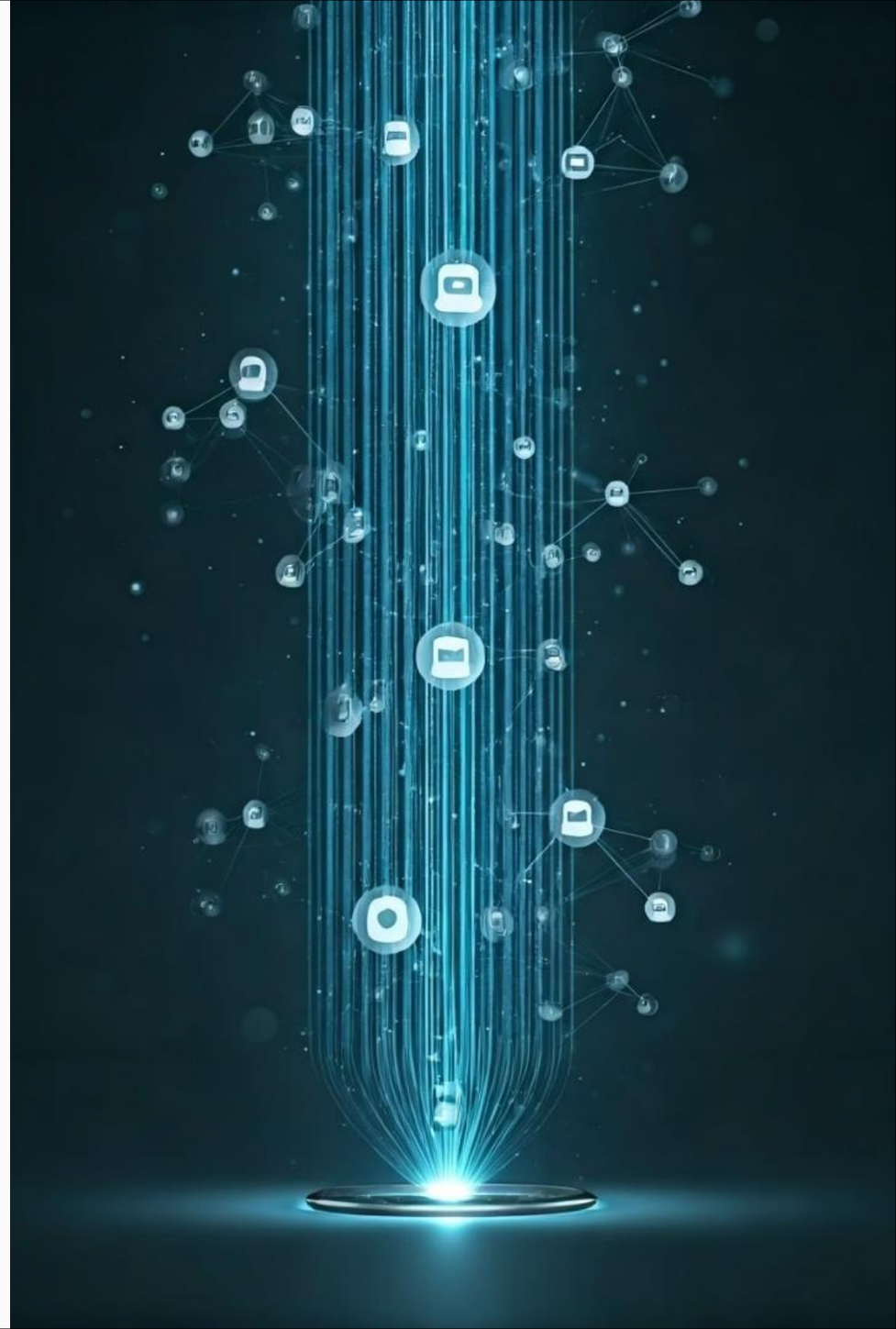
Grouping similar open-text answers for qualitative analysis.

4

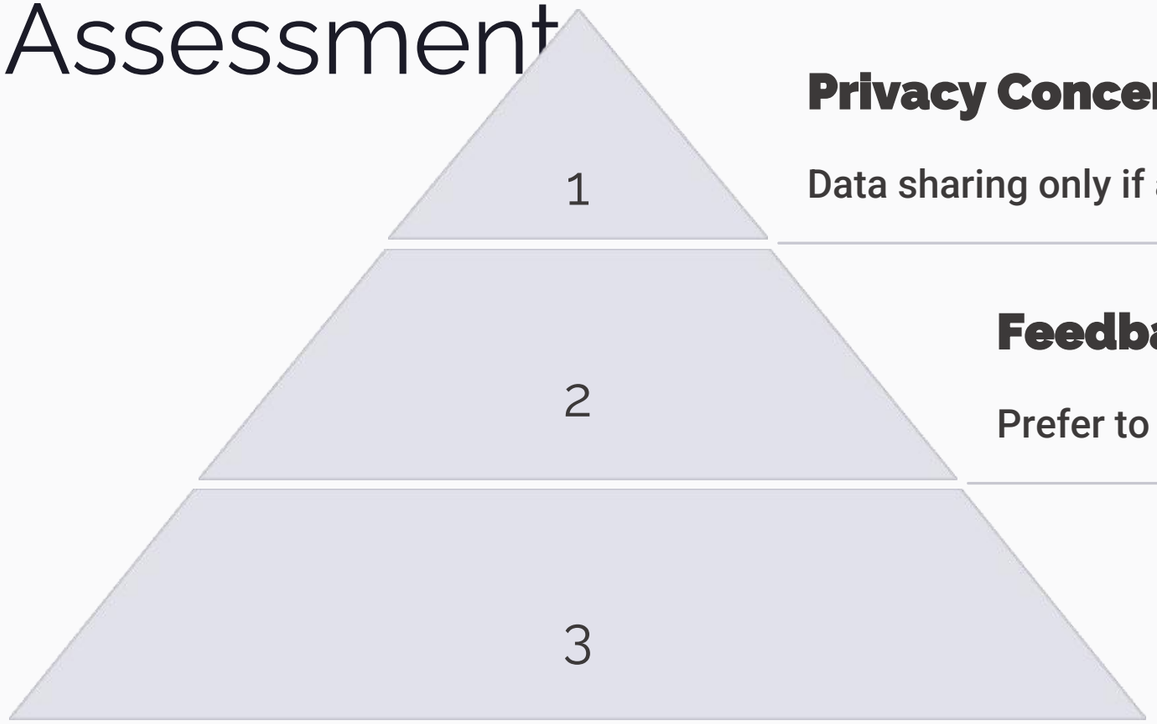
Transformation

Transformation of check-all-that-apply responses into binary indicators for analysis.

The raw survey data was cleaned and processed using the following steps. This ensured the integrity and consistency of the data before deeper analysis.



User Reluctance Assessment



Privacy Concerns

Data sharing only if anonymous or with permission.

Feedback Fatigue

Prefer to give feedback only when encountering issues.

Battery/Data Usage

Concerns about the app consuming battery and mobile data.

To assess potential user reluctance, we analyzed responses around privacy, feedback frequency, and concerns with the proposed app. These insights indicate that while there is substantial interest in the app, transparency about data usage and offering opt-in mechanisms will be critical to driving adoption.

Survey-Based Conclusions

1

MTN

Inconsistent.

2

Camtel

Fast but expensive.

3

Orange

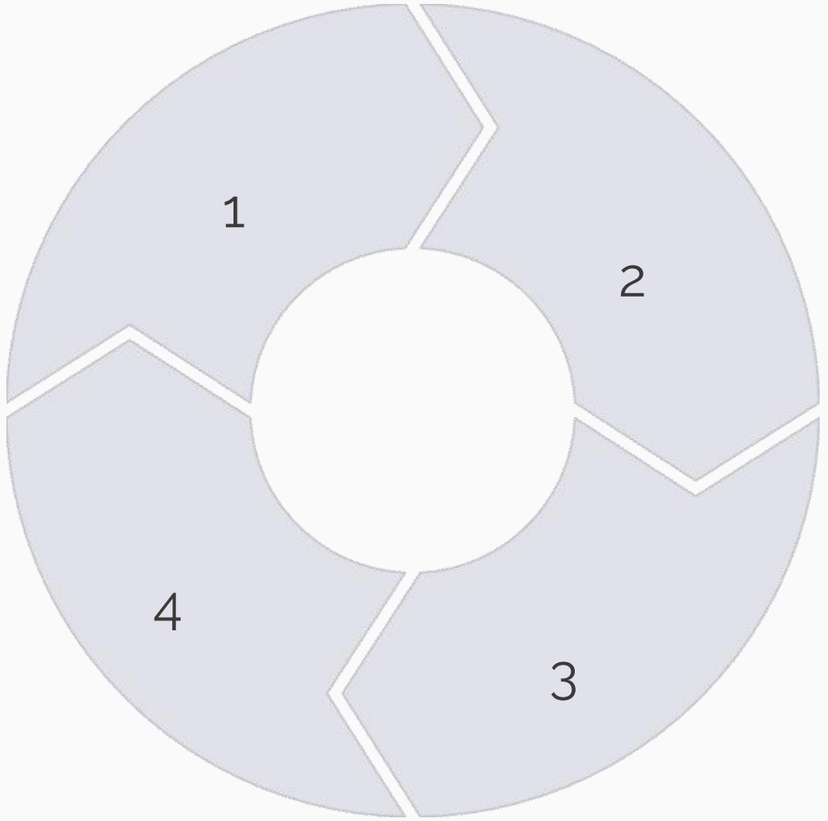
Most stable.

Most users face recurring issues with mobile network reliability, especially fluctuations in signal strength and bandwidth. MTN, though widely used, is inconsistent. Camtel is considered fast but expensive and often unusable. Orange is the most stable but has disruptions, particularly on weekends. Users often switch between networks to find the best performance based on location and time.

Application Interest and Feature Preferences

Manual Reporting

Signal Strength



Network Rating

Speed Test

A majority of users expressed interest in using an app that monitors and reports network performance. The majority of respondents fall in the 18–34 age range, primarily male, and located in cities like Buea, Yaounde, and Douala. Satisfaction varies by age group, with many younger users showing dissatisfaction, likely due to higher dependency on stable internet for education, work, or entertainment. Top requested features include manual issue reporting, signal strength monitoring, speed test, and network rating.

Recommendations

1

Targeted Marketing

2

Feature Development

3

Improve Trust

The requirement gathering process, combining survey analysis and user feedback, reveals clear user needs: stable network performance, transparent app features, and strong privacy assurances. By addressing these needs, the proposed mobile app can play a vital role in enhancing the mobile network experience in Cameroon.