



**PM SCHOOL
CHALLENGE**

Improving Navigation Screen on Google Maps



By : Diya Chodnekar

LinkedIn - <https://www.linkedin.com/in/diya-chodnekar/>

Email - diya.chodnekar@gmail.com

- Google Maps is a mapping and navigation application for desktop and mobile devices launched by Google in 2005. Maps provide turn-by-turn directions to a destination along with 2D and 3D satellite views, and public transit information.



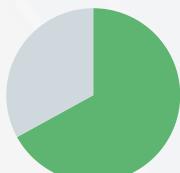
10 Bn+ Downloads
4.2 Star Rating



1 Bn+ Monthly
Active Users



40+ Languages
Supported

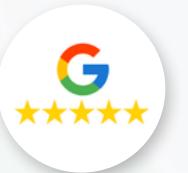


67% Market
Share

KEY FEATURES



Multiple Destinations
Allows adding up to nine stops in a single route with drag-and-drop reordering



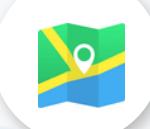
Reviews and Inside Views
Provides reviews, photos, and videos of places to help users explore menus and locations



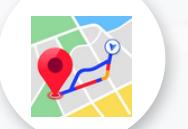
Live View
Provides AR-based navigation using camera view for accurate walking directions



Location/Trip Sharing
Allows sharing real-time location and trip progress with others for safety and coordination



Offline Maps
You can download maps for offline use to ensure navigation in areas with poor cell service

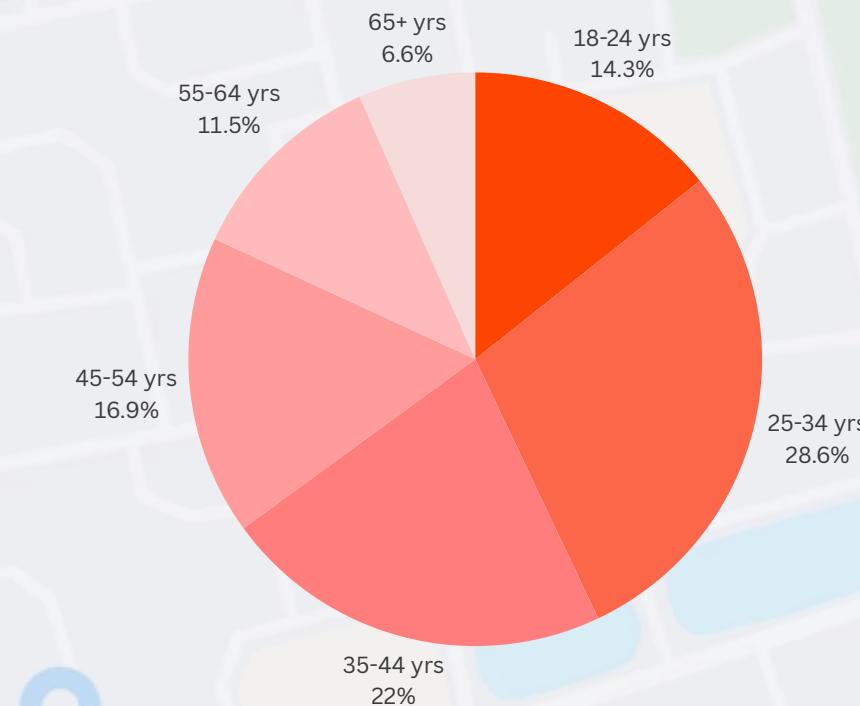


Traffic Conditions
Indicates the best routes using real-time traffic conditions, to avoid congestion and save time

Business Data

- Over 200M businesses and places listed on Google Maps as of 2023.
- 73% of websites and businesses in the U.S. use Google Maps' API technology to enhance their online visibility and accessibility of services.
- Google Maps Platform API offers \$200 worth of free usage per month, equivalent to loading maps 28,400 times.

Google Maps | Age Demographics



11.2B +

Annual Revenue '23

24k +

Cities Worldwide

200M +

Visits per month

3rd

most used Google App

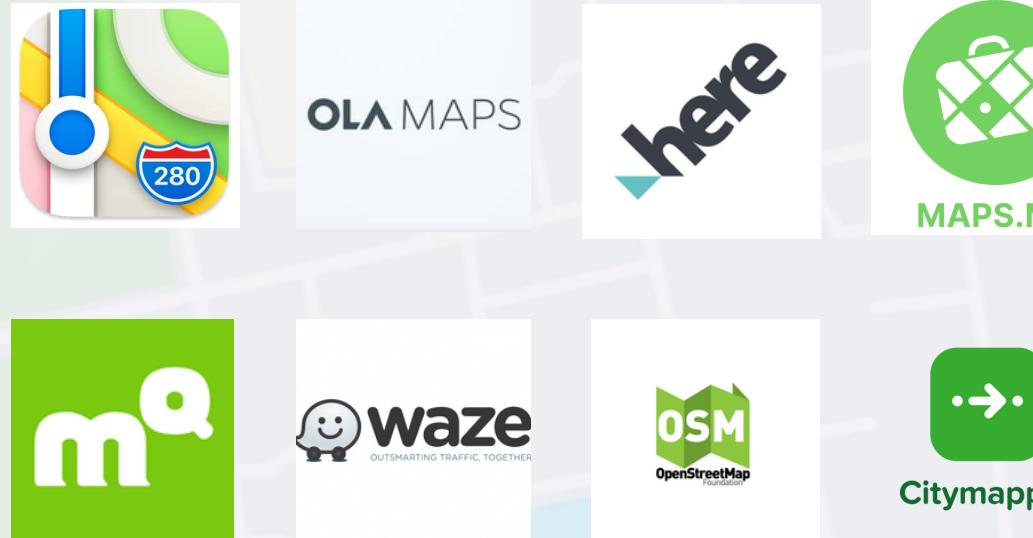
5M +

API users per week

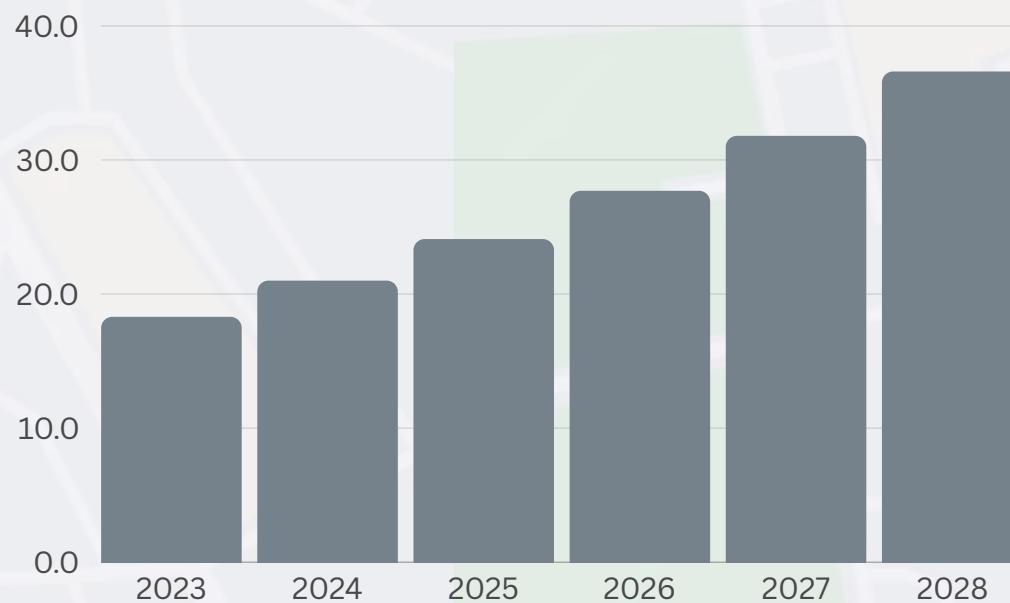
40,000TB +

Geospatial Information

Competitors



Navigation App Sector Annual Revenue (\$bn)



Google Maps | Annual Revenue



Competitor Analysis

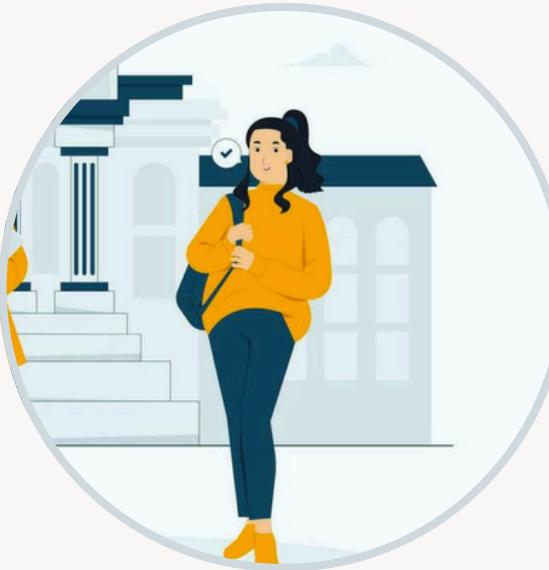
Monthly Unique Users	126.2 M	31.0 M	29.3 M	2 M
Monthly Reach	70 %	17 %	16 %	1 %
Stickiness	30 %	26 %	11 %	48 %
Average Session Duration	3 mins	4.6 mins	2.3 mins	2.2 mins

PROBLEM STATEMENT

- Google Maps hasn't undergone a significant update in many years. With a mature product like Google Maps, making substantial changes can be challenging since over a billion users are accustomed to its current interface. However, you feel that it lacks a few features that could address major pain points, such as confusion between roads and enhancing the driving experience for car drivers compared to two-wheeler riders.
- You propose introducing three new features to the Google Maps navigation screen that won't drastically alter the interface but will still bring improvements and solve key user problems.

**Sam | 25 yrs
Young Professional
Mumbai, Maharashtra**

He drives across Mumbai's bustling streets daily for work and often encounters potholes, waterlogged areas, and narrow lanes that disrupt his commute.

**Sara | 35 yrs
Business Owner
New Delhi, Delhi**

She frequently travels to different cities for business meetings and site visits. Her trips often involve navigating unfamiliar roads and complex urban environments.

Pain Points

- Frequent delays and vehicle damage due to unreported road issues.
- Experiences delays and vehicle wear due to poor road conditions.

Needs

He needs to receive notifications about potential road problems ahead, allowing him to choose alternative routes and avoid delays and an option where can report road issues in real-time or at the end of his journey.

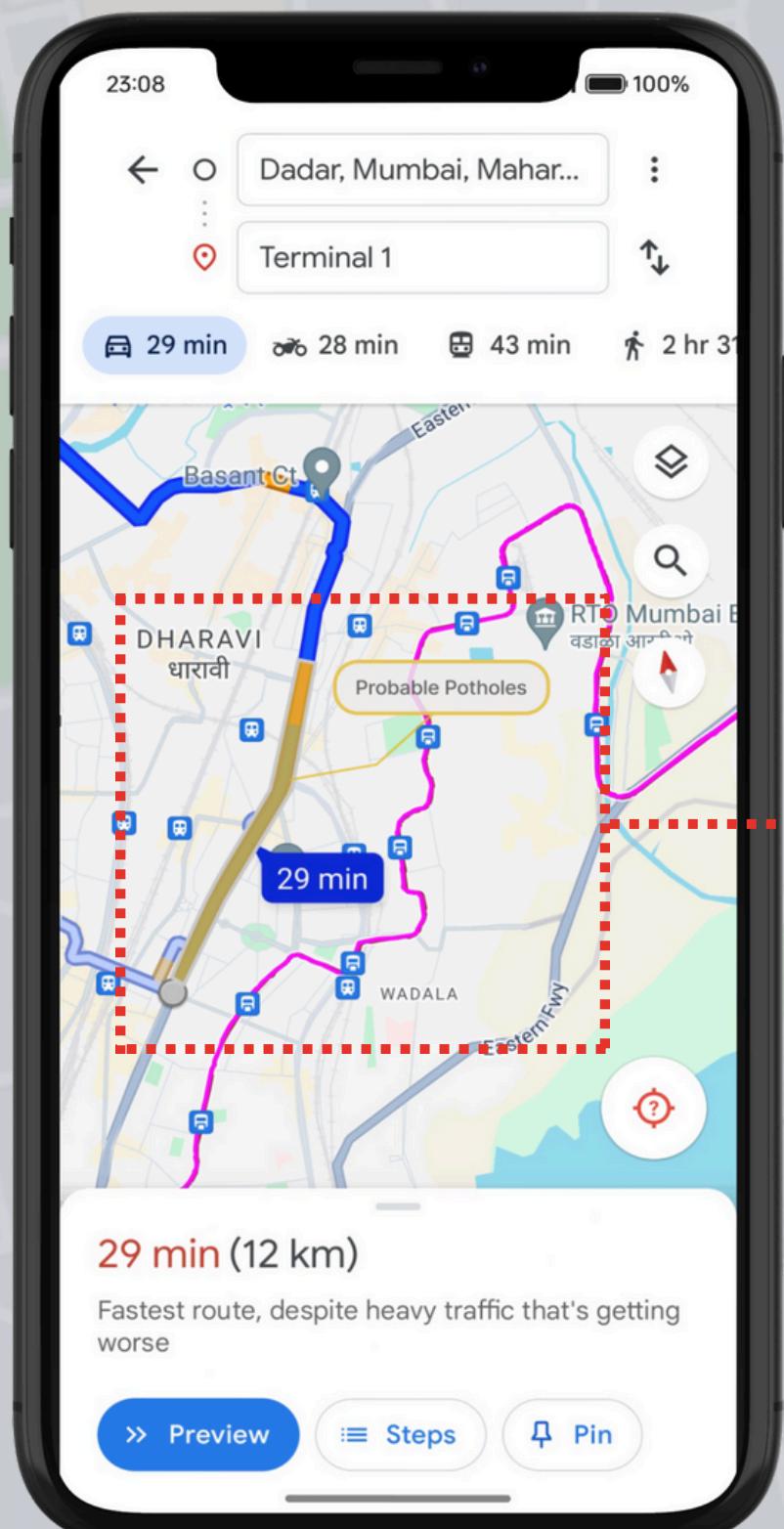
Pain Points

- Faces challenges with navigating new cities with confusing road layouts and multiple road splits.
- Finds it difficult to manage missed turns and route recalculations in unfamiliar locations.

Needs

She needs visual/voice notifications to help her understand road splits and complex intersections in unfamiliar cities and instant alerts if she misses a turn, with options to revert to the original route or get a new path from her current location.

Feature #1: Route Condition Alerts



Target User: Sam

User Pain Point

- Users can face potential hazards like potholes, waterlogging, and narrow roads, reducing their safety and driving comfort.
- Users will be able to avoid problematic areas, leading to smoother and quicker journeys.

Value to User

- Drivers are forewarned about potential hazards, allowing them to take safer and convenient routes.
- By avoiding problematic areas, users can have a smoother driving experience, reducing vehicle wear and tear.

Feature Insights

- Real-time Reporting:** Users can report road conditions during or after their journey, marking specific sections of the road.
- Crowdsourced Accuracy:** The more reports received for a particular issue, the higher the confidence level, transitioning from "probable" to "confirmed" problems.

Value to Google

- Encourages users to interact with the app more frequently, increasing daily active users (DAU) and user retention.
- Collects valuable real-time data on road conditions, which can be leveraged for partnerships with local authorities or navigation improvements.

Potential Pitfalls

- Reporting Accuracy:** Ensuring the accuracy of user reports can be challenging since false reports or lack of reports might lead to misinformation.
- User Participation:** Insufficient reports could lead to less effective hazard warning as it is reliant on user participation.

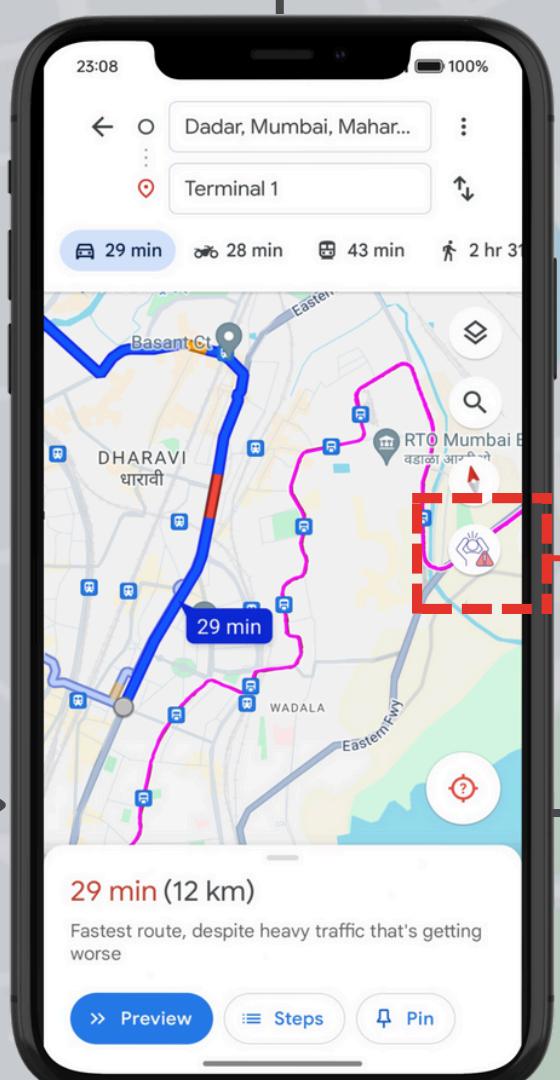
Route Condition Alerts Userflow

Open Google Maps
Launch the Google Maps app on your device

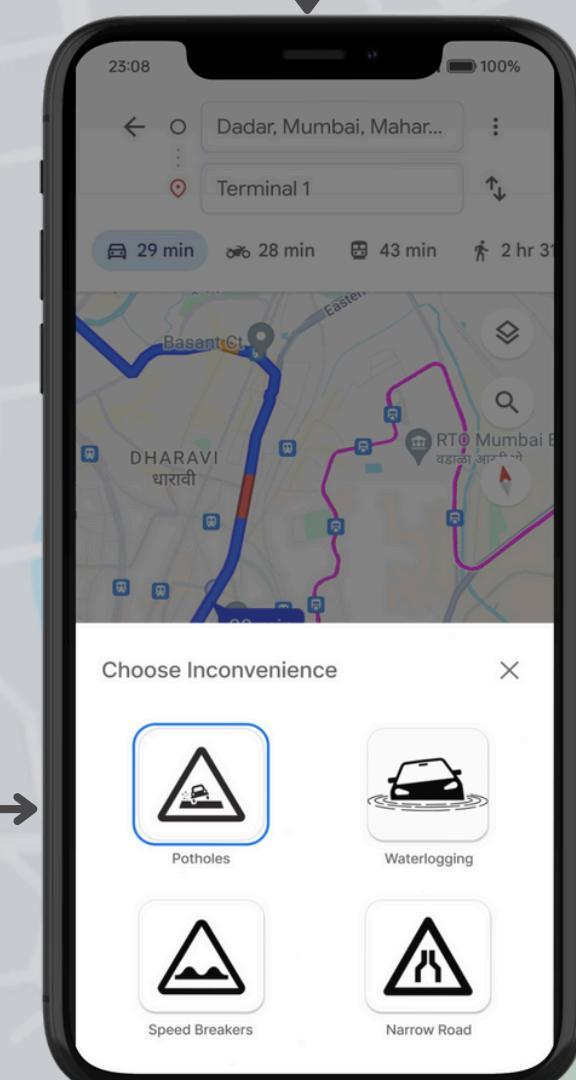
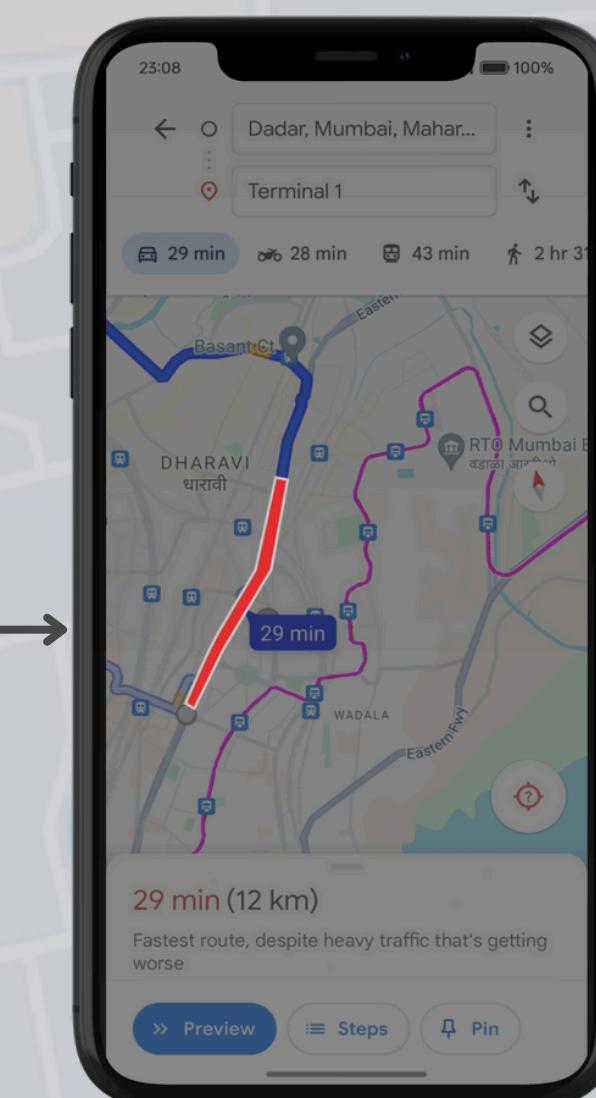
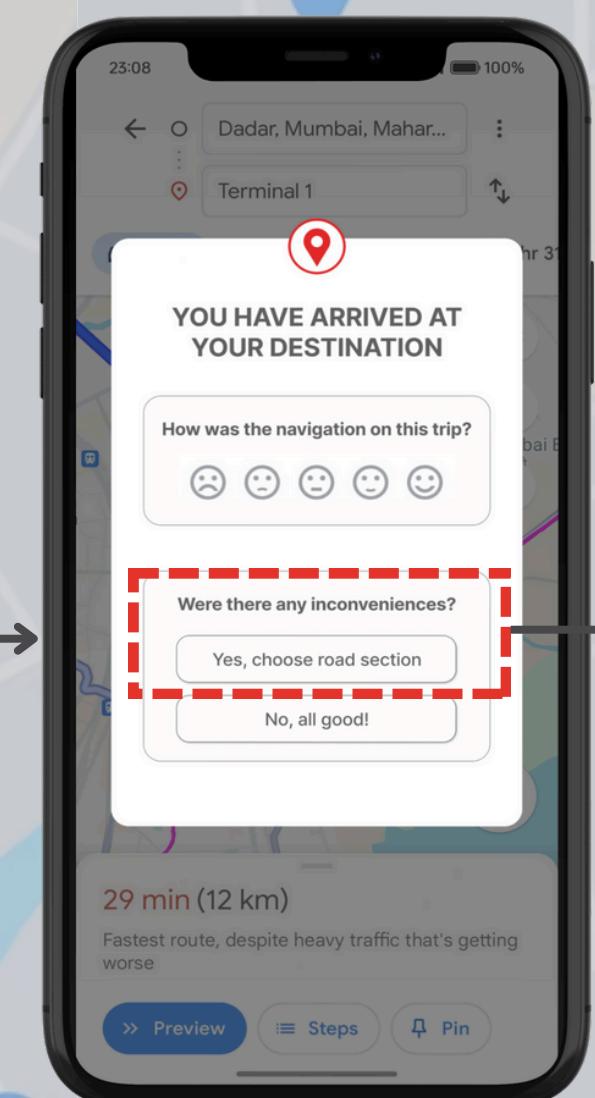
Start Navigation
Enter your destination and start navigation

Case 1: Report During Journey

Tap the report button during your journey when you encounter an inconvenience.

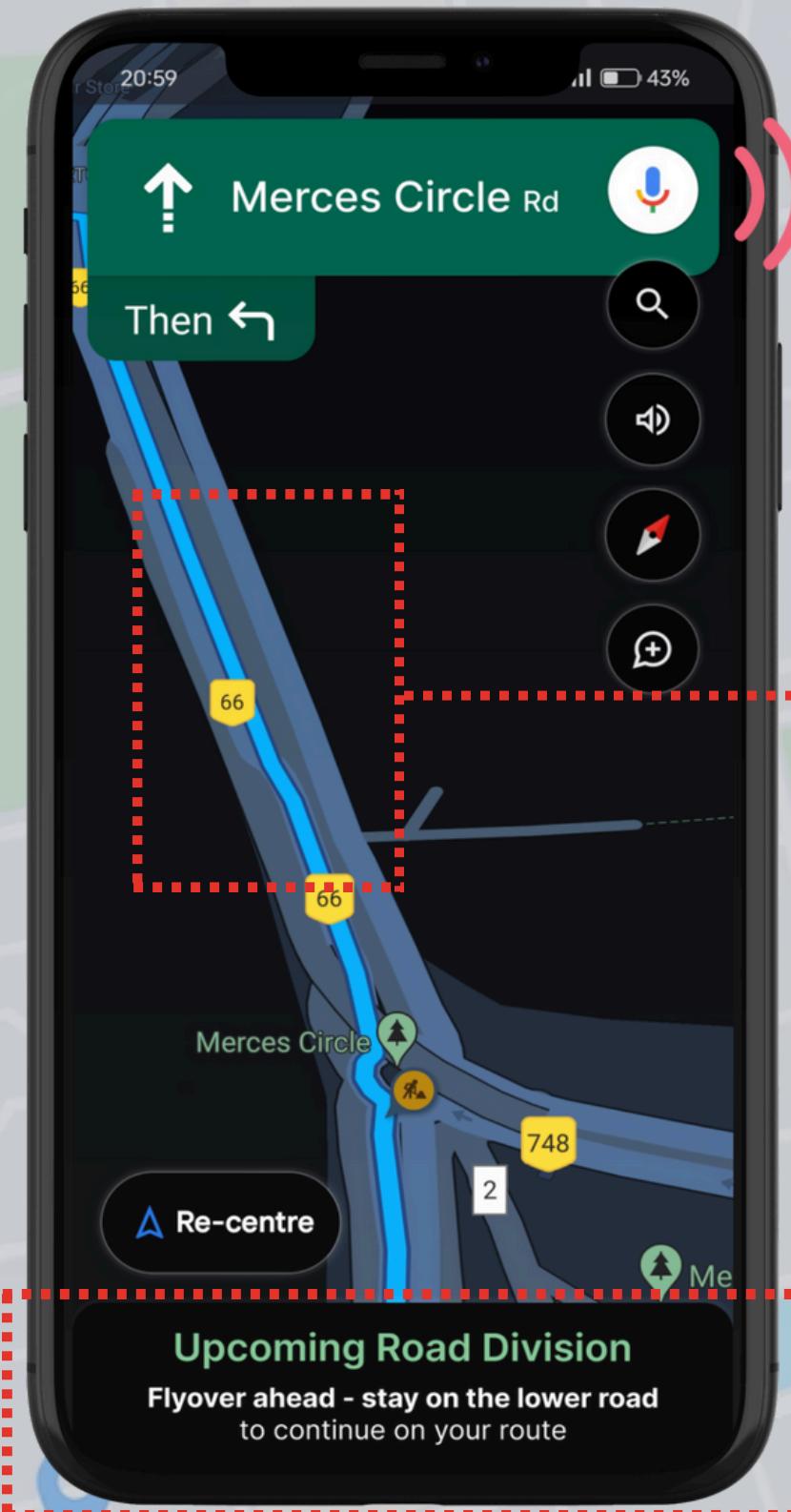


Case 2: End of Journey Reporting



Choose the type of issue (pothole, waterlogging, speed breaker, narrow road) from the list

Feature #2: Route Clarity Assistant



Target User: Sara

User Pain Point

- Users find it difficult to identify road splits, exits, and height-separated roads, leading to missed turns and navigational errors.
- Users may not distinguish between closely running roads, especially in complex intersections and multi-level roads.

Value to User

- Minimizes the risk of sudden lane changes or missed exits, contributing to safer and more efficient travel.
- Reduces confusion and stress of users by providing precise instructions at critical junctions, improving their overall driving experience.

Feature Insights

- Voice Notifications:** The Google Maps voice assistant will clearly announce upcoming diversions, service roads, or bypasses.
- Visual Alerts:** For users with voice assist off, a clear message will appear at the bottom of the screen indicating road divisions, diversions, exits and bypasses

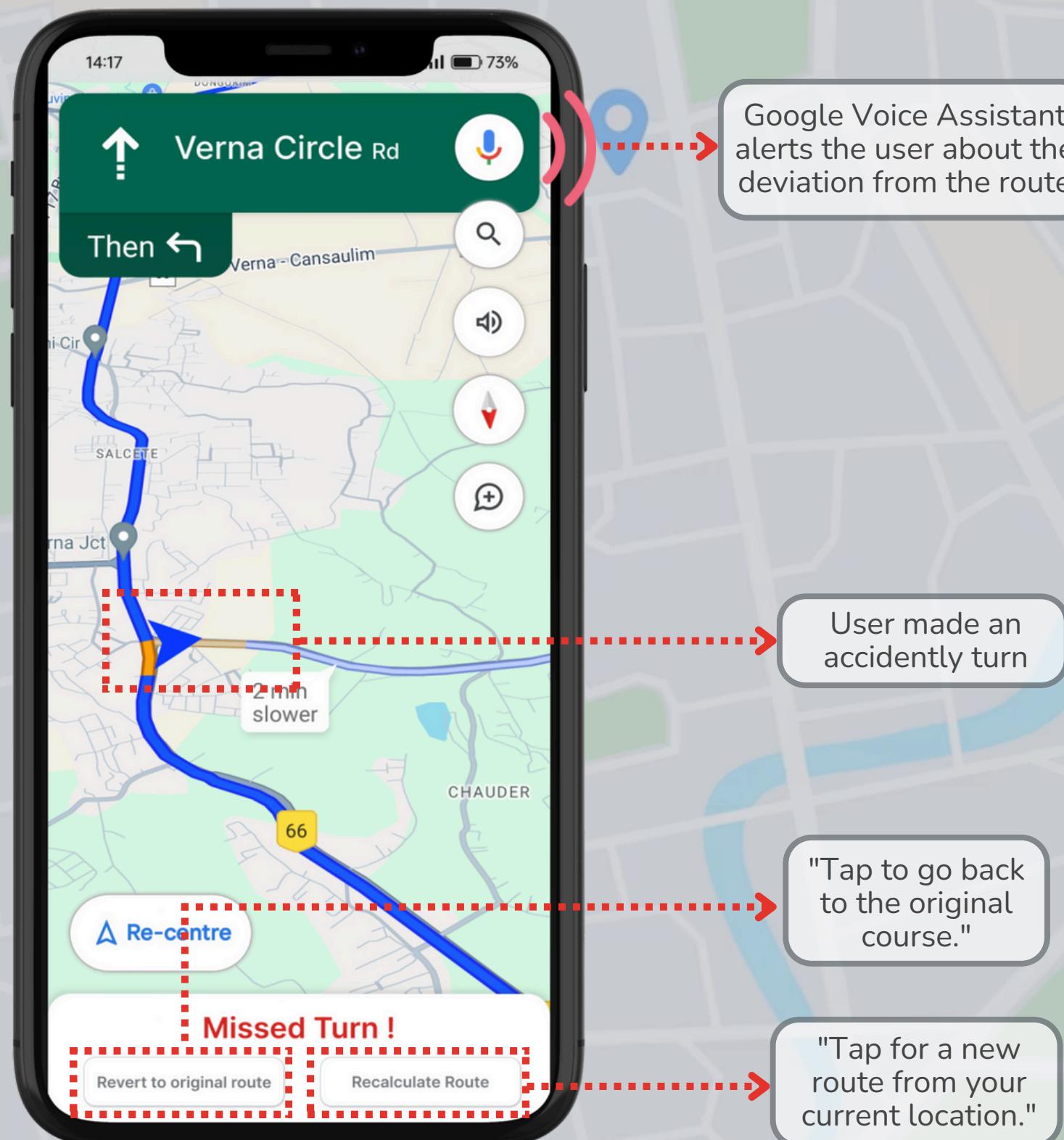
Value to Google

- Enhances the usability and reliability of Google Maps, potentially increasing user retention and engagement.
- Improved knowledge of user routes and behaviors can enhance Google Maps' location-based advertising, potentially boosting ad revenue.

Potential Pitfalls

- User Preference:** Some users may prefer visual cues over voice notifications, potentially finding voice alerts distracting or redundant.
- Notification Overload:** Excessive or frequent alerts, especially in areas with many road divisions, could overwhelm users and make them frustrated.

Feature #3: Route Corrector



Google Voice Assistant alerts the user about the deviation from the route

User made an accidentally turn

"Tap to go back to the original course."

"Tap for a new route from your current location."

Target User: Sara

User Pain Point

- Users can get frustrated and confused caused by missing a turn on complex roads with many and confusing turns.
- Users may make additional wrong turns or struggle to interpret which road to take at complex intersections

Value to User

- Alleviates the stress and confusion of missed turns by providing clear and immediate corrective options.
- Helps users quickly recover from navigational errors, saving time and ensuring smoother journeys.

Feature Insights

- Real-time Alerts:** Instantly notifies users when they deviate from the planned route with clear visual notifications and voice alerts.
- Two Routing Options:** Offers users a choice between reverting to the original course or recalculating a new route from their current location.

Value to Google

- Encourages users to interact with the app more frequently, increasing daily active users (DAU) and user retention.
- Gathers valuable data on user behavior and navigation preferences improving data analytics capabilities for better service optimization.

Potential Pitfalls

- Notification Overload:** Users might become overwhelmed by frequent alerts, especially in areas with many potential missed turns.
- User Decision Fatigue:** Constantly offering choices between reverting and recalculating could lead to decision fatigue for some users.

Prioritization using RICE

Feature	Reach (Out of 10)	Impact (Out of 10)	Confidence (Out of 10)	Effort (Out of 10)	Rice Score (R*I*C/E)
Route Condition Alerts	9 High reach, especially in areas with poor road conditions	8 High impact, improving travel safety and comfort	8 High confidence, frequent complaints about road conditions	6 Moderate effort, implementing a reporting system	96
Route Clarity Assistant	8 Broad reach, especially in cities with complex road networks	8 High impact, reducing missed turns and confusion	9 Very high confidence, frequent complaints about road conditions	8 Low effort, enhancing existing voice/visual guidance systems	72
Route Corrector	7 Moderate reach, assists users who often miss turns	6 Moderate impact, improving navigation efficiency	7 Significant confidence, need for better turn management	6 Moderate effort, develop the real-time alert system	49

Prioritisation : Route Condition Alerts >

Route Clarity Assistant > Route Corrector

Feature-Level Metrics	
Feature	Success Metrics
Route Condition Alerts	<ul style="list-style-type: none"># total reports per day/week/month# reports per userPercentage of users submitting reportsAverage delay time before and after usageCTR of inconvenience report button# road sections selected
Route Clarity Assistant	<ul style="list-style-type: none">Trip completion rateDecrease in trip timeUser feedback on notification usefulnessIncrease in # successful trips
Route Corrector	<ul style="list-style-type: none"># Alerts per user per tripAlerts frequency in specific areasPercentage choosing revert vs. new routeCTR of revert button and new route buttonTurn RateIncrease in # successful trips

High-Level Metrics	
Type	Success Metrics
User Growth	<ul style="list-style-type: none">Monthly Active Users (MAU)Daily Active Users (DAU)Stickiness
Engagement	<ul style="list-style-type: none">Average session duration per user# sessions per user per monthFeature usage rate
Retention	<ul style="list-style-type: none">Monthly retention rateChurn rate
Navigation Accuracy	<ul style="list-style-type: none">% of accurate turn-by-turn directions providedfrequency of navigation errors/incorrect directionsSuccessful route completions
User Satisfaction	<ul style="list-style-type: none">Net Promoter Score (NPS)Customer Satisfaction Rate (CSAT)Customer lifetime value (CLV)





THANK YOU