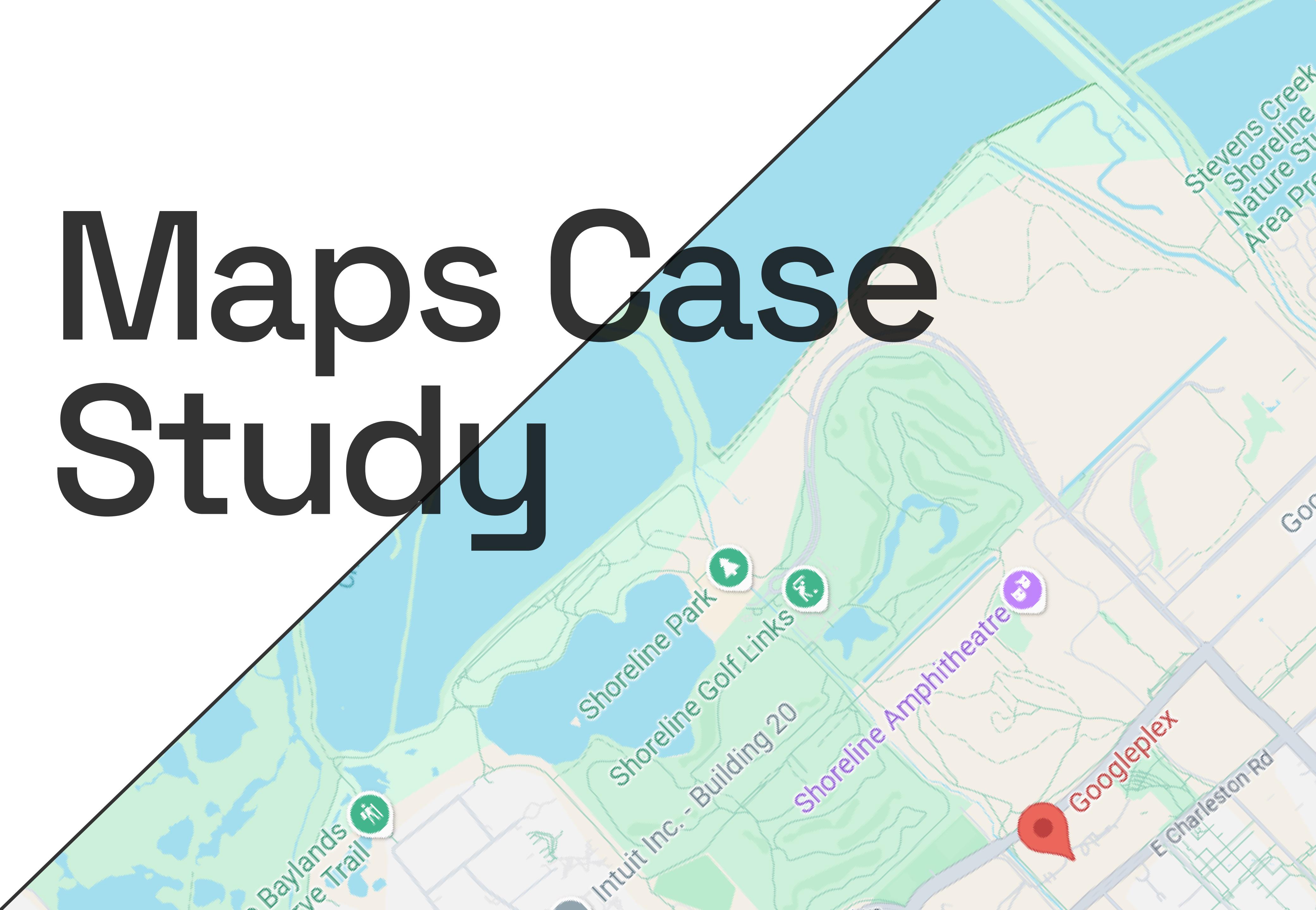




Maps Case Study





Let's learn about Google Maps

Google Maps is a web mapping platform and consumer application offered by Google. It offers satellite imagery, aerial photography, street maps, 360° interactive panoramic views of streets (Street View), real-time traffic conditions, and route planning for traveling by foot, car, bike, air and public transportation. As of 2020, Google Maps was being used by over one billion people every month around the world. Google Maps began as a C++ desktop program developed by brothers Lars and Jens Rasmussen in Australia at Where 2 Technologies. In October 2004, the company was acquired by Google, which converted it into a web application.

Let's deep dive into Google Maps

- **Mission:** Google Maps aims to provide accurate, real-time navigation and location-based services, improving accessibility and information sharing across the world.
- **Unique Value Proposition:** Unlike competitors, Google Maps combines navigation, discovery, and user-generated content (reviews, photos) in one platform.
- **Core Functions:** Includes real-time traffic updates, turn-by-turn navigation, local business information, Street View, offline maps, and custom user contributions like ratings and photos.

1 Billion+

The percentage
is currently at
63.75%*.

Monthly
Users
Worldwide.

Google Maps
has the
largest
market share.

3 Million+

Websites use
it Worldwide.

35 Million+

Businesses
and places
in India.

Business Model of Google Maps

FIRST, ADVERTISING REVENUE (~80%)

- **Promoted Pins:** Businesses can pay to appear as promoted pins on the map, increasing visibility to nearby users.
- **In-Search Ads:** Sponsored businesses show up at the top of search results, making it easier for users to discover local services and businesses.
- **Location-Based Ads:** Personalized ads are shown based on users' location history, interests, and activity, enhancing ad relevance and effectiveness.

SECOND, GOOGLE MAPS PLATFORM API LICENSES (~15%)

- **Maps, Routes, and Places APIs:** Offers paid access to Google Maps APIs, used by companies to integrate mapping, routing, and location data into their own platforms.
- **Custom Solutions:** Tailored, high-volume licensing options for enterprises with specific mapping needs, such as real estate, logistics, and delivery services.

FINALLY, DATA LICENSING AND STRATEGIC PARTNERSHIPS (~5%)

- **Fleet Management Solutions:** Paid tools designed for logistics and delivery companies, offering advanced routing for fleet optimization.
- **Data Insights for Businesses:** Provides aggregated, anonymized data insights on customer movement, which helps businesses make informed decisions on location planning and marketing.

3 Main Challenges faced by Google Maps

01 REAL-TIME TRAFFIC DELAYS AND LIMITED PREDICTIVE CAPABILITIES

Users often face delays due to sudden traffic congestion and lack of proactive rerouting, especially during peak hours.

02 LIMITED OFFLINE FUNCTIONALITY IN LOW-CONNECTIVITY AREAS

Users in rural areas or without connectivity miss out on full navigation, complicating travel planning.

03 LACK OF PERSONALIZED ROUTE AND LOCATION RECOMMENDATIONS

Google Maps' navigation often overlooks routes or places personalized to user preferences.

Mapping a Better Journey

REAL - TIME TRAFFIC DELAYS AND LIMITED PREDICTIVE CAPABILITIES

Pattern recognition in traffic data: Machine learning models can identify patterns in traffic flow based on time of day, weather conditions, day of the week, and seasonal events by analyzing historical data. For instance, models may predict the occurrence of traffic buildup in highly dense areas during peak hours or predict unusual traffic patterns over holiday weekends.

Time-Series Analysis: Implementation of time-series models, such as LSTMs, will allow predicting traffic congestion in given time periods. LSTMs can process sequential data-like traffic records on a daily level. They are perfectly applied for capturing traffic changes across minutes, hours, and days. This way more accurate predictions about where the delay will occur and at what time can be used.



Mapping a Better Journey

LIMITED OFFLINE FUNCTIONALITY IN LOW-CONNECTIVITY AREAS

Offline Detailed Maps: Users can download layers of detailed maps that include, but not limited to, turn-by-turn directions, popular points of interest, and changes in real time within the area. Google might stretch the offline capabilities even further with the inclusion of landmarks and points of interest and relevant information such as gas stations, restaurants, and hospitals.

Selective Download Options: Download the maps in sections according to the duration of trip or geographical needs, say, in particular routes, trails, or scenic routes for hikers, cyclists, or long-distance travelers; saving storage space and allowing only what is most important to be viewed.

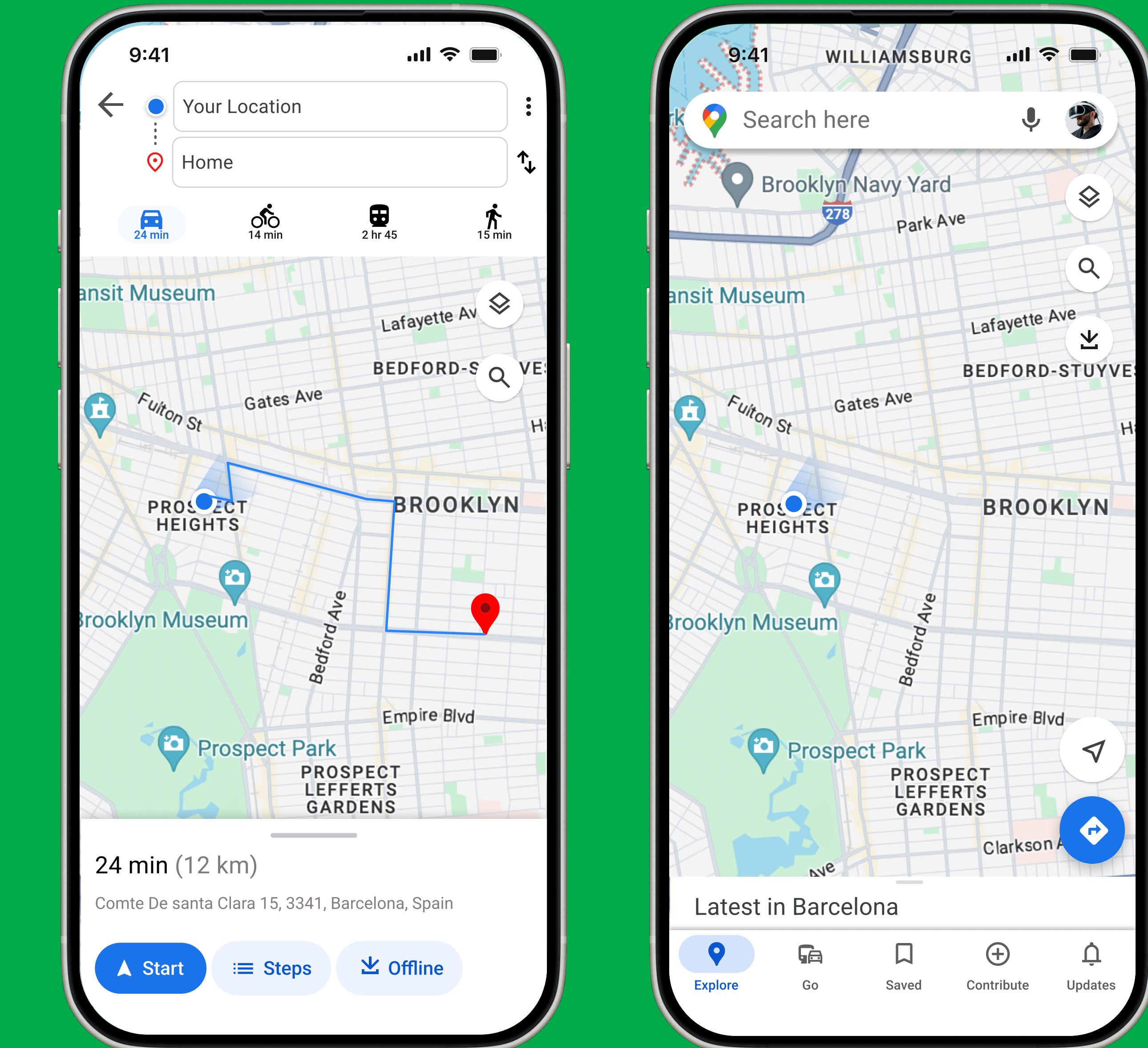


Here's new concept on mobile

One-Tap Offline Route Download: A new "Download Route" button lets users easily save their current route for offline access, including directions, traffic estimations, and nearby points of interest, making it easy to navigate without connectivity.

Quick Access to Downloaded Routes:

"Saved Routes" are now accessible directly beneath the search bar, providing users with an organized list of downloaded maps and routes for easy selection and quick navigation in offline mode.

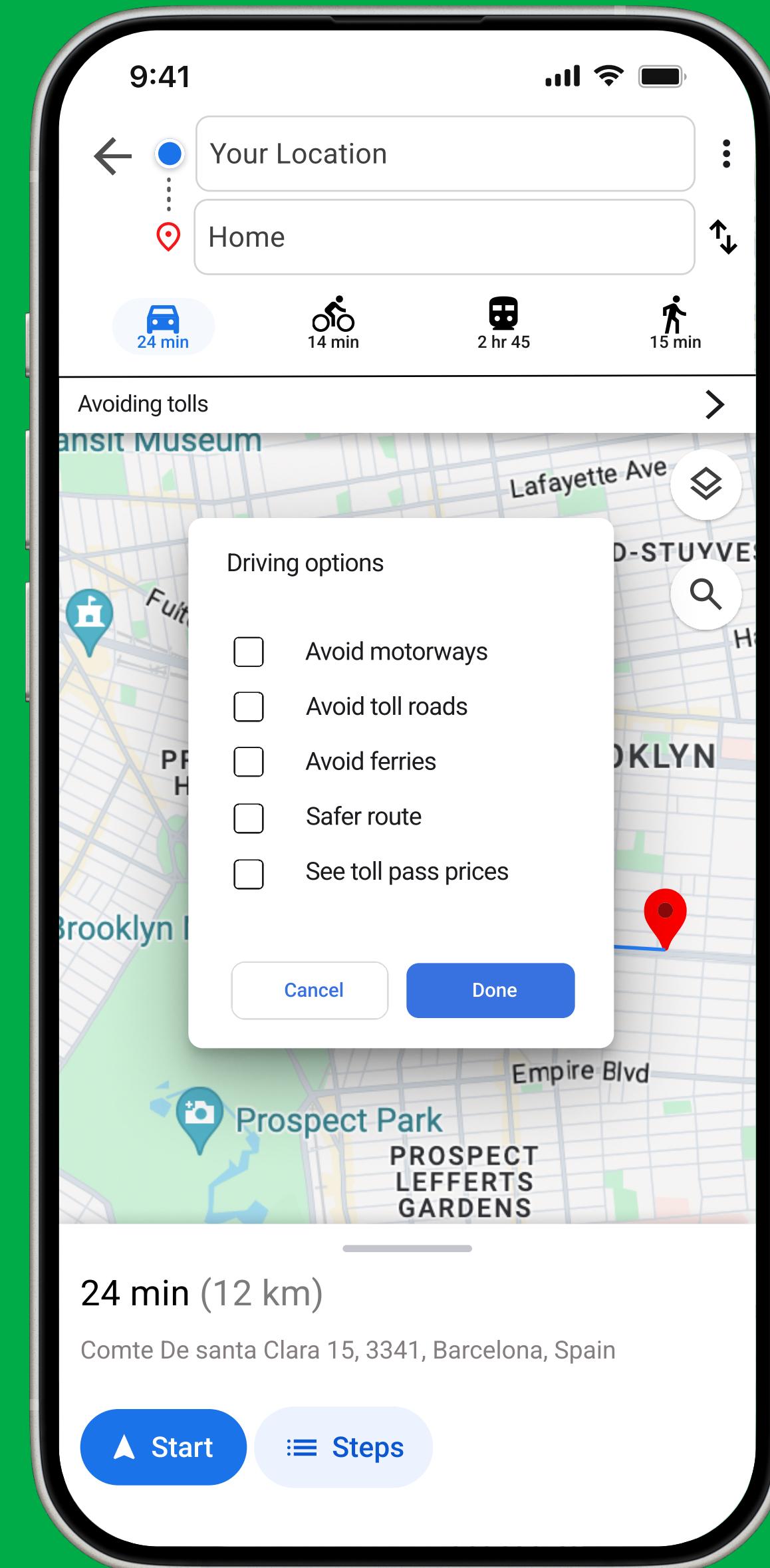


Mapping a Better Journey

LACK OF PERSONALIZED ROUTE AND LOCATION RECOMMENDATIONS

Landmark-Driven Directions: Since many Indian users rely on prominent landmarks rather than street names, Google Maps could enhance route instructions to include locally known landmarks, such as “Take a left at India Gate” or “Pass the Hanuman Mandir on the right.” This approach would make navigation more intuitive, especially for users unfamiliar with exact street names.

“Safe Route” Feature with Local Input: To address safety concerns, particularly at night, Google Maps could use user feedback and local authority data to flag potentially risky areas, such as isolated roads or low-lit neighborhoods. Users would then have the option to select safer routes, particularly if traveling late at night.



Show-Stopping
Moment

Revolutionize
Navigation: Make
Maps a Truly
Personalized and Safe
Companion for Every
User.

KPI's & Metrics

USER ENGAGEMENT AND SATISFACTION

Monthly Active Users (MAU)

Growth: Track growth in active users, especially in targeted regions, to assess the appeal of the new features.

Retention Rate: Measure retention to see if personalized routes, safety options, and offline functionality keep users engaged over time.

RELIABILITY METRICS

Time Spent Navigating Offline:

Average time users spend in offline mode could reveal the feature's usefulness in low-connectivity areas, especially in rural India.

Increased Arrival Time Accuracy:

Measure improvements in estimated vs. actual arrival times, indicating the reliability of routes, even in high-traffic Indian cities.

USAGE OF KEY FEATURES

Offline Maps Downloads (Specific to Rural/Low-Connectivity Regions):

Track the volume of offline downloads to see if users in low-connectivity areas are leveraging this feature.

Safe Route Usage: Track how frequently users activate or toggle the Safe Route option, especially in high-risk or nighttime contexts.

MARKET PENETRATION AND REGIONAL GROWTH

Regional MAU Growth (India-Specific): Monitor growth in monthly active users in India and compare urban vs. rural user growth.

User Growth in Tier 2 and Tier 3 Cities: Track adoption rates in smaller cities, as an indicator of Google Maps' reach beyond major metro areas in India.

Mapping the Future: Key Takeaways

Market Leadership

- With over 1 billion monthly users, Google Maps stands as the leading navigation platform, offering real-time updates, discovery, and user-generated content that sets it apart from competitors.

Diverse Revenue Model

- Google Maps leverages advertising, API licensing, and data partnerships, making it valuable not just to users but also to businesses in sectors like logistics and real estate.

Addressing Key Challenges

- Traffic Prediction: Enhanced machine learning for real-time and predictive traffic updates can improve route accuracy and user experience.
 - Expanded Offline Features: Boosting offline functionality with detailed downloads will better serve users in low-connectivity areas, especially rural regions.
- Personalized and Safe Routes: New features for customized and safe route options can make navigation more user-centric and reliable



Thank You

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