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Pasabay

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TABLE OF CONTENTS

Page	Contents	Page
I.	Title Page	1
II.	Table of Contents	2
III.	Introduction	3
IV.	Background of the Study / App Description	4
V.	Objectives	5
VI.	System Features	6
VII.	System Design & Architecture	2
VIII.	Data Flow / Model and Services Explanation	4
IX.	Screenshots and Descriptions	4
X.	Technology Stack	3
XI.	Challenges and Limitations	3
XII.	Conclusion and Recommendations	3
XIII.	References	3
XIV.	Appendix	3

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PROPOSED TITLE

Pasabay

ABSTRACT

The informal pasabuy (personal shopping) and padala (package sending) economy in the Philippines represents a massive, yet highly inefficient and insecure market, currently operating through chaotic social media groups. This project proposes the development of Pasabay, a mobile application designed to formalize this existing peer-to-peer behavior by creating a structured and trustworthy marketplace. Pasabay functions as a crowdsourced logistics platform, connecting users needing items delivered with ordinary commuters already traveling along a specific route. Core features designed to build trust and efficiency include user profile verification, a transaction logging system for confirming external payments and key delivery milestones, a transparent two-way rating system, and a streamlined interface for posting trips and requests. By leveraging pre-existing travel, the platform aims to provide an affordable logistics alternative for inter-town deliveries, create supplemental income opportunities in alignment with SDG 8 (Decent Work and Economic Growth), and contribute to more sustainable communities (SDG 11). Ultimately, Pasabay seeks to build a layer of digital trust upon a deeply ingrained Filipino practice, turning community-based logistics into a secure, viable, and scalable enterprise.

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INTRODUCTION

The rapid growth of community-driven digital transactions in the Philippines has contributed to the emergence of informal logistics practices such as *pasabuy* and *padala*, which rely heavily on interpersonal trust and social media coordination. These practices, though widely used and deeply integrated into Filipino culture, remain largely unregulated and vulnerable to inefficiencies, misinformation, and financial risks. As more Filipinos depend on peer-to-peer logistics for inter-town and provincial exchanges, the limitations of existing informal systems become increasingly apparent, especially in terms of user safety, transaction tracking, and the difficulty of locating reliable transporters. In response to this gap, technology-driven solutions offer the potential to formalize and strengthen community logistics by integrating trust mechanisms, transparent workflows, and organized communication channels. The development of the Pasabay mobile application arises from this need to transform a traditional informal system into a secure, structured, and efficient digital platform that supports both everyday commuters and individuals requiring accessible delivery solutions.

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PROBLEM

In the Philippines, a vast and vital informal logistics network thrives on the cultural practices of *pasabuy* (requesting a purchase) and *padala* (sending items). Millions of Filipinos, particularly those connecting urban centers like Iloilo City with their provincial hometowns, rely on this peer-to-peer system daily to transport goods, access items, and stay connected with family.

Currently, this multi-million peso economy operates almost entirely within the chaotic and unstructured environment of social media platforms like Facebook and Messenger. While accessible, this system is fundamentally flawed, suffering from critical deficiencies:

- **Lack of Security.** Transactions are based on pure trust, leaving users highly vulnerable to financial scams, item theft, and damage with no formal recourse or payment protection.
- **Gross Inefficiency.** Users must manually sift through hundreds of disorganized, non-chronological posts to find a traveler going their way, leading to significant wasted time and missed opportunities.
- **Absence of Accountability.** There is no standardized system for verifying a user's identity or tracking their reputation, making it impossible to distinguish reliable community members from potential fraudsters.

The consequences of this flawed system are significant: legitimate online sellers are hesitant to serve provincial customers, students and families are forced to pay exorbitant fees to formal couriers as their only safe alternative, and potential earnings for honest commuters are lost amidst the digital noise and lack of trust.

Therefore, the central problem is the absence of a dedicated digital platform that can formalize this existing, high-volume behavior by providing the necessary layers of security, efficiency, and trust that the current informal system completely lacks.

CURRENT SOLUTION

While there is no direct competitor that perfectly replicates the peer-to-peer, crowdsourced logistics model of **Pasabay**, the problem is currently being addressed by a combination of three distinct solutions. Pasabay positions itself by taking the best attributes of each while solving their critical flaws.

1. The Informal Social Media Ecosystem (Primary Current Solution)

This is the largest and most direct competitor, as it's where the target behavior currently resides.

- **How It Works:** Transactions are initiated and coordinated within public or private Facebook Groups (e.g., "Iloilo Pasabuy & Padala," "Antique Online Market") and managed through private

chats on Messenger. Payments are typically made via direct, irreversible transfers on GCash or Maya.

- **Strengths:**
    - **Massive User Base:** Nearly the entire target market is already on these platforms.
    - **No Cost:** There are no platform fees or commissions.
    - **Low Barrier to Entry:** Anyone with a Facebook account can immediately participate.

- **Weaknesses (The Opportunity for Pasabay):**
    - **Zero Security:** High prevalence of scams, ghosting, and theft with no financial protection.
    - **Highly Inefficient:** Discovering a traveler for a specific route is a manual, time-consuming process of scrolling through a chaotic, non-chronological feed.
    - **No Accountability:** There is no formal reputation or rating system, making it impossible to assess the reliability of a stranger.
    - **Disorganized:** Managing multiple requests or tracking an item's status is a logistical nightmare for both parties.

2. On-Demand "Pabili" & Delivery Apps (Secondary Competitor)

These are the established tech players in the logistics space.

- **Competitors:** Grab (Grab Pabili, Grab Express), Lalamove (Purchase Service), Maxim.
- **How It Works:** Users book a professional or semi-professional rider to perform an immediate task, such as buying an item from a store or delivering a package from Point A to Point B.
- **Strengths:**
    - **Speed & Convenience:** Excellent for urgent, on-demand needs.
    - **Platform Trust:** The transaction is backed by a corporate entity with customer support and GPS tracking.

- **Weaknesses:**
    - **High Cost:** The formal, distance-based fee structure makes them significantly more expensive than informal methods.
    - **Limited Geographic Scope:** Their model is optimized for **intra-city deliveries** (e.g., within Iloilo City proper) and is not cost-effective or widely available for inter-town or provincial routes.

3. Traditional Courier Services (Secondary Competitor)

These are the legacy, branch-based logistics providers.

- **Competitors:** LBC, J&T Express, JRS Express.
- **How It Works:** Customers bring a pre-packaged item to a physical branch, fill out paperwork, and pay for shipping. The company

then transports the item through its hub-and-spoke logistics network.

- **Strengths:**
    - **Security & Reliability:** Very secure for sending valuable or important items.
    - **Nationwide Network:** They can reach almost any destination in the Philippines.

- **Weaknesses:**
    - **Cannot Handle "Pasabuy":** Their service is strictly for *padala*; they will not purchase an item on a customer's behalf.
    - **Slow:** Deliveries, especially to provincial areas, can take several days.
    - **Inconvenient:** Requires the sender to package the item and travel to a physical branch during operating hours.
    - **Cost:** While reliable, they can be an expensive option for small, low-value items.

PROPOSED SOLUTION

The proposed solution is **Pasabay**, a peer-to-peer mobile application designed to formalize, secure, and streamline the informal *pasabuy* and *padala* economy in the Philippines. The application functions as a two-sided marketplace, connecting a "Requester" (a user needing an item bought or delivered) with a "Traveller" (a user who is already making a journey along the required route). By creating a centralized platform, Pasabay replaces the chaotic, inefficient, and insecure nature of social media groups with a structured and reliable system.

What sets Pasabay apart is its unique **crowdsourced logistics model.** Unlike on-demand delivery apps that dispatch a rider for a special trip at a premium cost, Pasabay leverages the millions of pre-existing, routine journeys made by ordinary commuters, students, and drivers every day. This makes the service fundamentally more affordable and perfectly suited for planned, inter-town, and provincial deliveries that are currently underserved.

Furthermore, unlike the high-risk environment of social media, Pasabay introduces a critical **scaffolding of trust** through three core features: **(1)** a formal transaction logging system where users can confirm external payments and delivery milestones to create a digital paper trail; **(2)** a user verification process to ensure accountability; and **(3)** a transparent, two-way rating system to build a community of reliable and reputable users.

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APP DESCRIPTION

Pasabay is a mobile application designed to modernize the traditional *pasabuy* and *padala* practices by creating a centralized platform where Requesters can connect with Travelers already passing through their intended route. Unlike conventional courier services and on-demand delivery applications, Pasabay leverages pre-existing travel patterns, making it particularly suitable for inter-town and provincial deliveries that are often underserved. The platform incorporates key trust-building features such as identity verification using government-issued IDs, a transaction logging system that records payments and delivery milestones, and a two-way rating mechanism to maintain accountability between users. Through its organized interface—complete with trip listings, request forms, messaging tools, and real-time activity tracking—the application provides a structured environment that resolves the inefficiencies and safety concerns found in social media-based logistics. This design not only makes deliveries more affordable and convenient but also enables ordinary commuters to earn supplemental income, contributing to a more reliable and sustainable community logistics ecosystem.

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Objectives

This project aims to develop a mobile application that formalizes and strengthens the informal *pasabuy* and *padala* logistics system in the Philippines by providing a secure, organized, and community-driven platform for peer-to-peer item delivery. Specifically, the application seeks to:

1. Establish a centralized digital marketplace that connects Requesters with Travelers for inter-town and provincial deliveries, offering an organized alternative to unregulated social media groups.

2. Integrate a secure transaction logging system that enables users to confirm payments, track key delivery milestones, and submit evidence during disputes, thereby creating a transparent digital record of interactions.

3. Provide a more affordable and reliable logistics option compared to traditional couriers and on-demand delivery services, particularly for provincial routes and non-urgent deliveries.

4. Enable supplemental income opportunities for daily commuters and drivers by allowing them to monetize existing travel routes, contributing to community-based economic development.

System Features

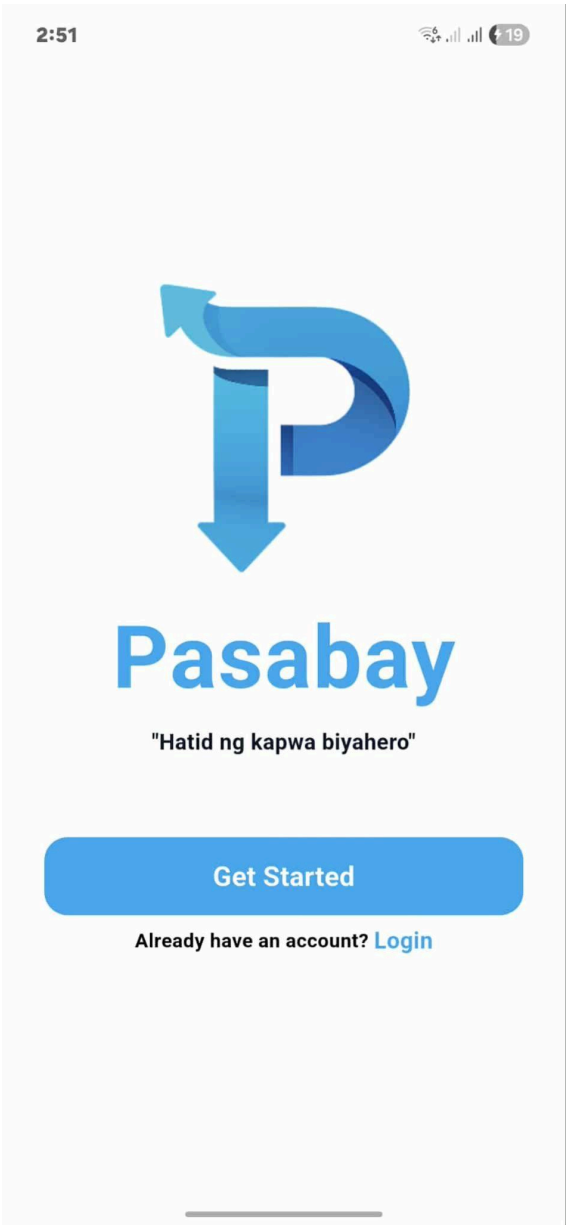

2:51
Pasabay
"Hatid ng kapwa biyahero"
Get Started
Already have an account? Login

Figure 1: Screen Title

User Registration and Verification

- Account creation via email and password
- Government ID upload and selfie verification
- Review and confirmation of submitted documents

- Verification updates within the platform

Verifier Website (Admin Verification System)

- A dedicated web-based platform used by authorized verifiers
- Provides access to submitted government IDs and selfie photos
- Allows personnel to inspect, authenticate, and validate user identities
- Enables approval or rejection of verification requests with remarks
- Serves as the security backbone ensuring all users on the mobile app are legitimate
- Synchronizes verification results with the Pasabay mobile application in real-time

Role Selection and Role Switching

- Users may select between **Traveler** and **Requester** roles
- Both roles include identical verification requirements
- Ability to switch roles through the profile settings

Traveler Module

- Home dashboard showing active trips and monthly earnings
- Route planning with destination, date, and time selection
- Activity page for viewing ongoing and new requests
- Accept/reject request modal

- Integrated messaging for coordinating with Requesters

Requester Module

- Home interface with search tools to find available Travelers
- Trip matching based on preferred route and schedule
- Service selection modal for *Padala* and *Pasabuy*
- Detailed request forms including item specifications, instructions, and cost breakdown
- Request confirmation screen upon successful submission

Messaging System

- In-app chat for real-time communication
- Organized inbox for active conversations
- "View Details" button linking conversations to request summaries

Profile Management

- Editable profile details, contact information, and optional biography
- Role switching between Traveler and Requester
- Access to account preferences and support features

Trust and Accountability Tools

- Two-way user rating system
- Visibility of user identity details to build credibility
- Digital paper trail for all significant transaction milestones

SYSTEM DESIGN & ARCHITECTURE

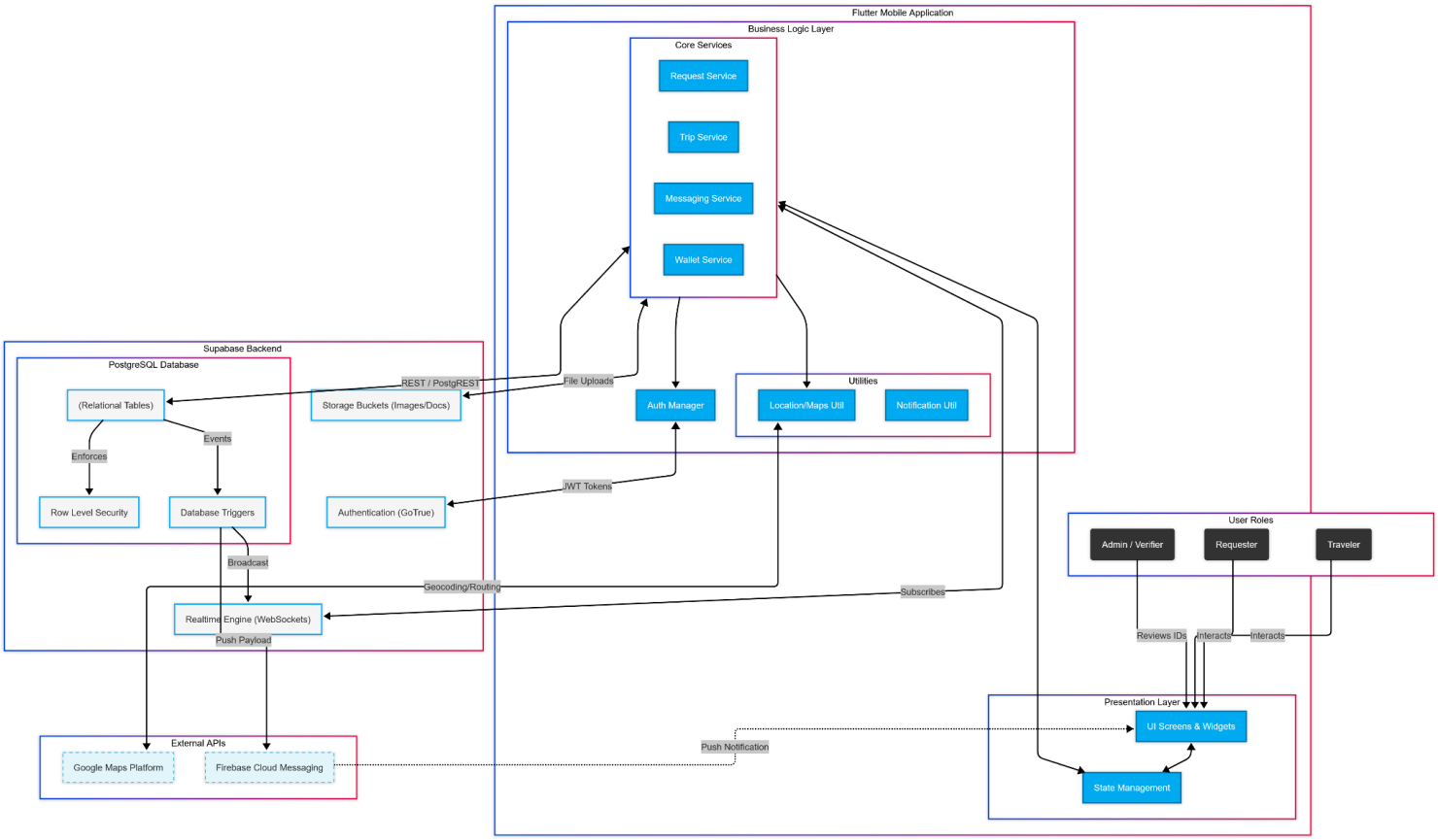


Figure 1. System Overview Diagram

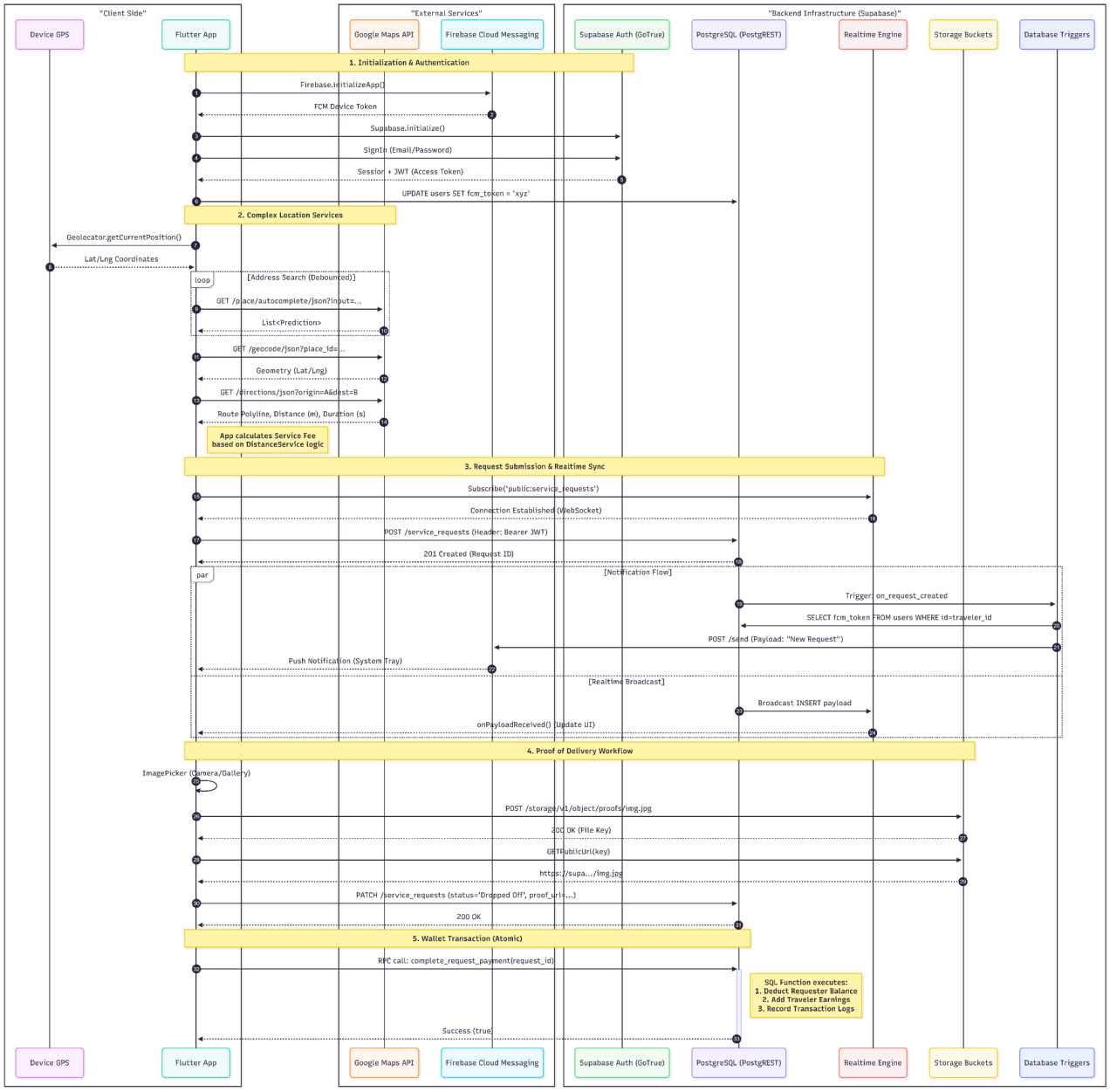


Figure 2. Google Maps API & Supabase Integration

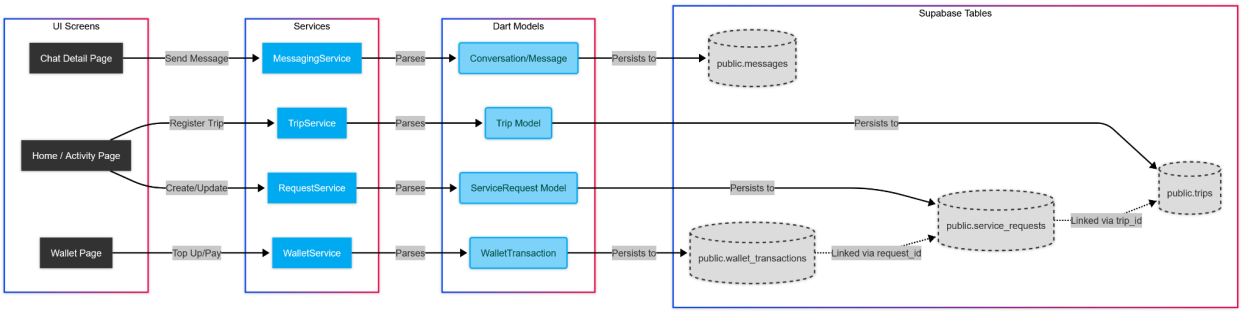


Figure 3. Data Flow Diagram

TECHNOLOGY STACK

Category	Technology	Purpose
Framework	Flutter + Dart	Cross-platform mobile development
Backend	Supabase (PostgreSQL)	Database, auth, storage, real-time
Maps	Maps Google Maps API	Location services, route visualization
Storage	Supabase Storage	File uploads (images, documents)
Real-time	Supabase Realtime	Live messaging, notifications
Auth	Supabase Auth	User authentication & sessions
Push Notification	Firebase Cloud Messaging (FCM)	Sending real-time alerts and updates to users outside the application

The Pasabay mobile application is built using Flutter and Dart, a cross-platform development framework that enables the team to deploy a single codebase to both Android and iOS. This ensures faster development cycles, consistent UI/UX across devices, and efficient maintenance as the project scales. For the backend, the system uses Supabase, a powerful open-source alternative to Firebase that

provides a PostgreSQL database along with integrated authentication, file storage, and real-time capabilities. Supabase serves as the central infrastructure for managing core application data such as user accounts, trip listings, requests, verification documents, and message logs, while also handling authentication flows and secure session management through Supabase Auth. File management, including the uploading and retrieval of government IDs, receipts, photos, and proof of delivery, is handled through Supabase Storage, which offers scalable object storage with strict access rules to protect sensitive information.

To support location-based features, routing visuals, and geographic search, the application integrates the Google Maps API, enabling accurate map rendering, place lookups, coordinate selection, and route visualization for both travelers and requesters. Real-time interactions—such as instant chat messages, new request alerts, trip status updates, and verification results—are powered through Supabase Realtime, which uses WebSocket-based subscriptions to deliver updates instantly across connected devices. Finally, Firebase Cloud Messaging (FCM) is used to send push notifications to users even when the application is closed or running in the background. This ensures that important events—such as a traveler accepting a request, a verification approval, or a delivery milestone update—can reach users promptly, improving coordination, reliability, and overall user experience.

CHALLENGES AND LIMITATIONS

Liability and Insurance

The app currently has significant liability gaps in because there is no insurance, liability waiver, formal Terms of Service acceptance, or dispute/claims workflow. Photo proof and a basic gov-ID upload are insufficient legal protection; lost, damaged or incorrect items and fraudulent users expose both travelers and requesters (and the platform) to financial and legal risk.

Real-Time Location Tracking Challenges

The app only records manual checkpoints and lacks continuous background GPS streaming, so requesters cannot view live traveler movement. True real-time tracking requires background/foreground location services (Android foreground service), battery-aware update rates, efficient streaming to the backend (e.g., websocket or batched updates), server-side rate limiting and storage strategies, and clear opt-in/consent controls for privacy. Implement as an opt-in per trip, limit update frequency, compress/aggregate coordinates, and handle offline buffering to balance accuracy, cost, and battery impact.

Limited Communication Features

The current messaging is basic text-only and missing expected features: no image/voice support, no read receipts or typing

indicators, no push notifications when the app is closed (relying only on in-app realtime), no edit/delete/search, no group chats, and no quick-call/emergency contact options—limiting usability for delivery coordination and proof sharing.

Geographic and Routing Limitation

The app's routing is primitive: traveler_home_page.dart draws straight polylines between waypoints instead of using road-aware routes and there is no Google Directions (or equivalent) integration for turn-by-turn guidance or ETA calculations. Location selection isn't validated for accessibility or service area constraints, there's no geofencing to auto-detect arrivals, no distance- or traffic-based pricing or ETAs, no multi-stop route optimization, and no deviation/route-change alerts—so route accuracy, timing, pricing and automated status updates are all unreliable.

Quality Assurance and Testing Gaps

The codebase has almost no automated testing: unit tests for core services (request_service.dart, trip_service.dart, messaging_service.dart) are missing, widget tests for screens like request_detail_page.dart are absent, and integration/end-to-end tests that cover full flows (trip/request lifecycle, messaging, uploads) do not exist. Supabase client methods lack mockable interfaces, so service logic can't be tested in isolation; error paths, image upload behavior under varying sizes/network conditions, and real-time

subscription cleanup/memory scenarios are untested. As a result, regressions and runtime failures are likely and most verification is manual.

CONCLUSION AND RECOMMENDATIONS

Pasabay successfully addresses the inefficiencies, security risks, and lack of accountability inherent in the informal pasabuy and padala economy in the Philippines by providing a structured, trustworthy, and community-driven mobile platform. By leveraging existing commuter travel patterns, integrating identity verification, transaction logging, and a two-way rating system, the application formalizes peer-to-peer logistics while remaining affordable and accessible. Pasabay not only improves the reliability of inter-town and provincial deliveries but also creates supplemental income opportunities for travelers, thereby strengthening local economic activity and fostering a culture of digital trust within Filipino communities.

To enhance Pasabay's effectiveness and user adoption, it is recommended to implement background real-time location tracking with opt-in consent, expand messaging features to include multimedia, notifications, and quick-call options, and integrate route optimization with turn-by-turn guidance for improved delivery accuracy. Additionally, introducing formal terms of service, liability waivers, and optional insurance mechanisms will help mitigate financial and legal risks for both travelers and requesters.

Finally, investing in automated testing, QA processes, and user feedback loops will ensure system reliability, maintain trust, and support scalable growth as the platform formalizes the informal logistics ecosystem.

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APPENDIX

Main App Repository: https://github.com/hul20/Pasabay

Verifier Repository: https://github.com/hul20/PasabayVerifier

Powerpoint Presentation:

https://www.canva.com/design/DAG5z6nTiB0/RTeB7Oe8_Z0yExnl48LwMg/edit