ZEROVAEGA TECHNOLOGIES

BUSINESS CASE STUDY

Carsharing Platform

A route-based, community-driven mobility solution for structured, transparent ride-sharing.



CLIENT Zerovaega Technologies

SECTOR Mobility & Transportation

PLATFORM Android (Mobile App)

01 EXECUTIVE SUMMARY

Zerovaega Technologies designed and delivered a carsharing platform that connects commuters travelling on similar routes, enabling them to create or join shared rides, coordinate schedules, split fuel costs, and provide real-time tracking. The solution brings structure to informal carpooling while promoting trust, safety, and scalable digital ecosystems.

Coordinate
Simplify ride scheduling, pickups and drop-offs where it works.

Share Fairly
Enable transparent, rule-based travel-cost sharing.

Connect
Build trust-based communities of regular commuters.

Sustain
Cut individual transport costs & unnecessary vehicle use.

02 BUSINESS CHALLENGES

- **Inefficient coordination** — manual matching of schedules, pickup points and destinations causes delays.
- **Limited availability** — finding suitable vehicles/seats is hard during peak or high-demand periods.
- **Unequal cost sharing** — fuel, tolls and parking costs often split unfairly, causing friction.
- **Safety & trust gaps** — sharing a vehicle with unfamiliar people raises reliability concerns.
- **Fragmented communities** — commuters on the same route have no easy way to discover each other.

03 PROPOSED SOLUTION

A centralized platform managing the full ride-sharing journey — from ride creation to commuting and cost settlement.

Key Solution Components

- Driver & passenger profile management
- Ride creation, scheduling & discovery
- Vehicle & seat management
- Ride request, approval & booking
- Transparent cost-sharing engine
- Live trip / commuting support
- Route-based communities & subcommunities
- Ratings, feedback & notifications

04 KEY FUNCTIONAL MODULES

Ride Lifecycle
- Ride creation & scheduling
- Ride search & discovery
- Request, accept & booking
- Live trip tracking

Vehicle & Cost
- Vehicle registration & seats
- Fare calculation
- Fuel / toll / parking split
- Shared cost summary

Community
- Route-based communities
- Sub-communities by destination
- Invitations & member mgmt.
- Community ride sharing

Trust & Engagement
- Ratings & feedback
- Driver / passenger reviews
- Real-time notifications
- Profile & preferences

> Building structured, transparent and community-driven carpooling for smarter, safer and more sustainable commuting.

05 SOLUTION ARCHITECTURE & TECHNOLOGY STACK

A scalable three-tier architecture — a Flutter-based Android mobile app, Node.js backend services and MySQL database — supports secure, real-time operations and seamless user experience.

MOBILE APP (Android)
- Ride Discovery
- Ride Booking
- Live Tracking
- Communities
- Notifications
- Ratings & Feedback

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BACKEND SERVICES
- User & Ride Management
- Matching Engine
- Cost Calculation
- Notifications
- Ratings & Feedback
- Community Management

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DATABASE
MySQL

TECHNOLOGY STACK

Flutter (Android)	Node.js REST APIs	MySQL Database	JWT / OTP Authentication	Firebase Cloud Messaging Notifications	Google Maps API Maps & Location	Cloud Storage File Management

06 IMPACT POTENTIAL

- Better coordination & less commuting friction
- Fair & transparent cost sharing
- More vehicle availability & seat utilization
- Safer & more trusted ride-sharing experience
- Strong route-based communities
- Lower cost & reduced environmental impact
- Scalable platform for long-term growth

07 RESULTS & BUSINESS IMPACT

- Faster grievance registration and processing
- Real-time visibility across administrative levels
- Stronger coordination between field staff and departments
- Reduced dependency on paper-based workflows
- Greater accountability via structured ticket assignment
- Improved citizen service delivery through timely follow-ups

08 SECURITY & COMPLIANCE

- JWT session management & role-based access control
- Encrypted, secure REST API communication
- Secure file upload management for attachments
- Activity logging & audit trail for complaint actions
- Continuous user session validation

09 KEY FEATURES

Route Discovery · Ride Booking · Live Tracking · Cost Sharing

Communities · Ratings & Reviews · Notifications · User Profiles

10 CONCLUSION

The Carsharing Platform brings structure, transparency and trust to everyday commuting. Zerovaega Technologies is building a connected mobility ecosystem where communities share rides, costs and responsibility—creating smarter, safer and more sustainable journeys for everyone.



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