

Multidisciplinary Project Specification Chart (PRJP06)

2PC PROJECT**Project Specification Chart****Academic Year 2025 - 2026****PROJECT Num.: PRJP06****Title :****100%TOSSELCOM: Customer–Business–Courier Delivery Linking Platform**

Content

1. PROBLEM OVERVIEW	3
2. OBJECTIVES	3
3. FUNCTIONAL FEATURES	3
3.1 CORE FEATURES	3
3.2 ADVANCED / PREMIUM FEATURES	4
4. DOCUMENTATION	4
5. DEVELOPMENT ENVIRONMENT	4
6. USER INTERFACE	5
7. MODULAR BREAKDOWN	5
8. TECHNICAL SPECIFICATIONS	6
9. SYSTEM SECURITE	6
10. IMPLEMENTATION PLAN	7
10.1 PHASE 1 – MVP	7
10.2 PHASE 2 – FEATURE EXPANSION	7
10.3 PHASE 3 – PREMIUM SERVICES	7
10.4 PHASE 4 – OPTIMIZATION & INTELLIGENCE	7

1. **PROBLEM OVERVIEW**

Small and medium businesses and independent truckers face inefficiencies in freight transport due to poor visibility of available shipments and truck capacity. Empty return trips (backhauls), underutilized trucks, and reliance on informal communication channels lead to increased costs and wasted resources. Existing solutions are often broker-centric, complex, or designed for large enterprises, making them unsuitable for small operators.

100%TOSSELCOM is a multi-sided digital delivery platform that enables coordinated interaction between customers, businesses, and couriers within a unified operational framework. The platform supports the end-to-end delivery lifecycle by integrating order creation, delivery request management, real-time tracking, and secure payment processing. It facilitates efficient information exchange, service coordination, and performance monitoring, thereby improving operational efficiency, delivery reliability, and transparency across a wide range of local and on-demand logistics use cases.

2. **OBJECTIVES**

- a. Create a **B2B / near-C2C transport marketplace** for small-scale freight.
- b. Reduce empty and partially loaded truck trips.
- c. Enable efficient **route-based matching** between shipments and available trucks.
- d. Support **multi-shipment transport on a single route**.
- e. Provide a low-friction platform aligned with real-world transport practices.
- f. Offer optional premium features without enforcing heavy transaction control.

3. **FUNCTIONAL FEATURES**

3.1 **CORE FEATURES**

- User registration and profile management (shipper / trucker).
- Shipment posting by businesses (origin, destination, date, size, notes).
- Route and capacity posting by truckers.
- Automated matching of shipments and routes.
- Personalized feed of relevant postings.

- Notifications for new matching opportunities.
- Direct contact between users (phone number sharing).

3.2 ADVANCED / PREMIUM FEATURES

- Live GPS tracking.
- Pickup and delivery confirmation.
- Photo-based proof of pickup and delivery.
- Shipment history and analytics.
- Shareable tracking links.

4. DOCUMENTATION

- System Requirements Specification (SRS)
- User Requirements Document
- Functional Specification
- Database Schema Documentation
- API Documentation
- User Manuals (Shipper & Trucker)
- Administrator Guide
- Security & Privacy Policy

5. DEVELOPMENT ENVIRONMENT

- **Backend:** RESTful API architecture
- **Frontend:** Web application (responsive, mobile-first)
- **Database:** Relational database (e.g., PostgreSQL / MySQL)
- **Cloud Infrastructure:** Scalable cloud hosting
- **Version Control:** Git
- **Project Management:** Agile / iterative development

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- **Testing:** Unit testing, integration testing, user acceptance testing

6. USER INTERFACE

- Clean, minimal, low-friction design.
- Separate dashboards for:
 - o Shippers (shipments, tracking, history).
 - o Truckers (routes, loads, stops).
- Visual shipment cards with photos and summaries.
- Route timeline view for truckers showing multiple stops.
- Simple status indicators (posted, matched, picked up, delivered).
- Mobile-friendly UI optimized for drivers.

7. MODULAR BREAKDOWN

- **User Management Module**
 - o Authentication
 - o Roles (shipper, trucker)
 - o Subscription handling
- **Shipment Management Module**
 - o Shipment creation and editing
 - o Photos and descriptions
 - o Status updates
- **Route & Capacity Module**
 - o Route posting
 - o Capacity management
 - o Multi-load handling
- **Matching Engine**

- Route proximity matching
- Date and capacity matching
- Backhaul awareness
- **Communication Module**
 - Contact sharing
 - Notifications
- **Tracking & Proof Module**
 - GPS data
 - Timestamps
 - Photo uploads
 - Delivery confirmation
- **Analytics & Premium Services Module**
 - Usage insights
 - Performance statistics

8. TECHNICAL SPECIFICATIONS

- **Architecture:** Modular, service-oriented
- **Matching Logic:** Rule-based (initially), ML-ready for future upgrades
- **Data Handling:** One truck → one route → multiple shipments → multiple stops
- **Media Storage:** Secure image storage for shipment photos
- **APIs:** External GPS or map service integration (optional)

9. SYSTEM SECURITE

- Secure authentication and authorization.
- Encrypted data storage and communication (HTTPS).
- Access control based on user roles and subscription tiers.

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- Protection of personal contact information.
 - Compliance with data privacy principles.
 - Activity logging and basic fraud prevention mechanisms.

10. IMPLEMENTATION PLAN

10.1 PHASE 1 – MVP

- User registration
- Shipment and route posting
- Basic matching
- Contact sharing
- Core UI

10.2 PHASE 2 – FEATURE EXPANSION

- Notifications
- Multi-shipment route visualization
- Pickup and delivery confirmations
- Photo uploads

10.3 PHASE 3 – PREMIUM SERVICES

- Live GPS tracking
- Analytics dashboard
- Subscription tiers
- Performance optimization

10.4 PHASE 4 – OPTIMIZATION & INTELLIGENCE

- Matching improvements
- Usage-based recommendations
- Machine learning integration (optional)