SCOPE OF WORK (SOW) Multimodal Logistics Web Application

Project Duration: 4-5 Months

1. Project Overview

The client is a multimodal logistics operator functioning as a broker/agent between shippers, NVOCCs, carriers, and importers. They do not own containers, vessels, or warehouses but operate through a network of agents and warehouse contracts. The purpose of the proposed web application is to digitize the complete operational workflow, including enquiry management, quotation generation, job creation, shipment tracking, document management, bill of entry checklist creation, notifications, and MIS reporting.

2. Objectives of the Web Application

• Digitize and centralize all logistics and operations data.

• Provide a client-facing dashboard for real-time shipment tracking.

• Automate workflow: enquiry → quotation → approval → job creation → customs → delivery.

• Replace manual Excel-based systems (DSR & tracking).

• Ensure structured document management, edit logs, activity history, and archive storage.

• Implement push notifications for shipment updates.

• Allow warehouse-independent cargo routing and warehouse selection modules.

• Enable hierarchical role-based access control for multiple companies.

3. Functional Scope

3.1 Enquiry Module

• A client submits an enquiry containing shipment parameters:

  o Cargo details

  o CBM information

  o Port of Loading / Destination

  o Mode of transport (Air / Sea / Road / Rail)

• Admin/Operator manually requests quotations from external agents via email.

• When agents submit their quotations externally, the Admin manually enters those quotation values into the system for secure storage.

• Admin adds markup and generates a final quotation PDF for the client.

• Once the client approves, the enquiry converts into a Job.

3.2 Job Creation & Job Number System

• Each approved enquiry generates a unique Job Number.

• Job Number is used for internal tracking and acts as the client's tracking reference.

• Assigned agent, route details, expected timelines, document checklists, cargo specifications are linked.

3.3 Shipment Tracking Module

• Operator updates statuses including:

  o Shipment picked from origin

  o At origin warehouse

  o Reached port

  o Loaded on vessel/aircraft

  o In transit

  o Reached destination port

  o Customs clearance

  o Delivered

• Client dashboard displays last updated status, document status, estimated timelines, port history.

3.4 DSR Management (Excel Replacement)

• Build a web-based DSR interface replacing Excel.

• Job number, client name, agent assigned, shipment status, ETA, remarks.

• Bulk-upload, bulk-update, edit logs.

3.5 Document Management

• Upload PDF/JPG/PNG.

• Scan via mobile.

• Auto timestamp.

• Versioning and archive.

• Edit logs for compliance.

3.6 Bill of Entry Checklist Module

• Operator inputs structured data.

• System auto-generates BOE checklist.

• Flat file for customs.

• Stores customs-assessed BOE.

3.7 Warehouse Routing Module

• Destination warehouse input.

• Location, quantity, E-way bill.

• Used for planning.

3.8 Client Management

• Admin manages clients.

• Admin assigns shipments to clients.

• Admin stores quotations received from external agents manually.

3.9 Notifications & Alerts

• Email notifications.

• One-way notifications to clients.

• Internal push notifications.

3.10 Role-Based Access Control & Multi-Company

• Super Admin, Operations, Documentation, Client.

• Permissions for view/edit/delete/approve.

• Full activity logs.

3.11 Reporting & MIS Module

• In-transit shipments, Enquiries, Month-wise summary.

• Client-wise performance, Delay analysis.

• Exports to Excel & PDF.

3.12 Integration (Phase 2)

• API-based syncing of job numbers & billing records.

4. Technical Scope

• Modern UI/UX, responsive design, dashboards with charts/tables.

• API-driven backend architecture.

• Role-based access.

• Secure document storage.

• Logging & version control.

5. Project Flow (High-Level)

• Enquiry Raised by Client

• Admin requests quotations manually

• Admin enters quotations into system

• Admin adds markup

• Final quotation sent to client

• Client approves

• Job Number generated

• Shipment tracking begins

• Client uploads documents

• BOE checklist generated

• Customs updates imported

• Shipment delivered

• Notifications sent

• Archive all data

• MIS generated

6. Project Timeline (4–5 Months)

• Phase 1 – Planning & Architecture (2–3 Weeks)

- Requirement validation
- UI wireframes
- Database design
- Technical architecture

Phase 2 – Core Modules (5–6 Weeks)

- Enquiry Module
- Quotation Module
- Job Creation
- Client Management
- Document Upload

Phase 3 – Tracking & DSR (4–5 Weeks)

- Shipment tracking module
- DSR web version
- Notification system
- Edit logs
- Archive module

Phase 4 – Integration (3–4 Weeks)

- Checklist automation
- Flat file generator
- Customs update tracking

Phase 5 – Client Dashboard + Multi-company + Roles (2–3 Weeks)

- Client tracking dashboard
- Role-based system
- Multi-company partition

Phase 6 – Reporting & MIS (2 Weeks)

- All MIS reports
- Filters & exports

Phase 7 – Testing, Security, Deployment (2 Weeks)

- UAT testing
- Bug fixing
- Cloud deployment

Phase 8 – Post Launch (1 Week)

- Training
- Support
- Documentation

7. Deliverables

• Admin dashboard

• Client portal

• DSR automation

• Document management system

• Customs checklist generator

• Shipment tracking system

• Email alerts

• MIS suite

• User manuals & training

8. Recommended Technology Stack

Category	**Technology**
Frontend	Next.js, React, Tailwind CSS, shadcn/ui, TypeScript
Backend	NestJS, REST/GraphQL API, TypeScript
Database	PostgreSQL, Prisma ORM
Real-time	WebSockets / Socket.io
Caching/Queue	Redis, BullMQ
Storage	AWS S3
Notifications	SendGrid,
Auth	NextAuth or JWT Auth
CI/CD	GitHub Actions
Infrastructure	Docker, Terraform, AWS ECS/EKS