**FleetFloat Shipping Support System**

**Members and roles**

*Hillary Kimaiga: project lead, Backend Developer*

*Deborah Wanjiku: Database engineer*

*Bramwel Shaw: Backend Developer*

*Yvonne Kwaya: UI/UX & Frontend Developer*

*Sharon Nyaboke: Finance module developer*

*Josphat mwaura: Data analysis & QA Engineer*

1. ***Introduction***

A Shipping Support System is a comprehensive platform designed to manage and streamline the operations of a shipping and logistics network. It integrates various aspects such as ship management, cargo handling, port docking, storage, land transport, personnel management, financial transactions, and tracking services.

This system ensures efficient logistics by enabling seamless coordination between shipping companies, transport providers, port authorities, and cargo owners.

1. ***Problem Statement***

The global shipping industry faces significant challenges in managing ship operations, cargo tracking, port docking, customs clearance, and transportation logistics. Many shipping companies rely on outdated or fragmented systems, leading to inefficiencies, increased costs, and delayed deliveries.

**Justification**

* The global shipping industry handles over 90% of world trade, yet many processes remain manual or inefficiently automated.
* Lack of real-time tracking results in shipment delays, mismanagement, and loss of goods.
* Complexity in customs and clearance procedures leads to bottlenecks in logistics.
* High operational costs due to inefficient workforce management and TEU (Twenty-foot Equivalent Unit) storage misallocation.
* Fragmented communication between shipping operators, port authorities, transport providers, and customers.

By implementing FleetFloat, shipping companies can streamline operations, improve efficiency, and reduce costs, ultimately boosting their competitiveness in the global market.

1. ***Solution***

The Shipping Support System provides a comprehensive platform to manage ships, cargo, docking, storage, transportation, and finances efficiently. By integrating real-time tracking, automated scheduling, and financial transparency, the system optimizes shipping operations, reduces delays, and improves logistics coordination.

1. ***System Overview***

The system comprises several interconnected modules, each designed to handle a critical aspect of the shipping process. These modules include:

* Ship & Cargo Management – Tracks ships, containers, and cargo movement.
* Docking & Storage – Manages port docking schedules and warehouse storage.
* Transportation (Land & Sea) – Handles train and lorry transport logistics.
* Personnel & Workforce – Manages ship crew, dock workers, and transport personnel.
* Ownership & Business Relations – Keeps records of cargo owners, shipping companies, and clients.
* Financial & Billing – Tracks payments, invoices, port fees, and storage costs.
* Logs & Tracking – Provides real-time tracking for cargo and ships.

1. ***System Components & Features***

* ***Ship & Cargo Management***

This module is responsible for tracking all ships and the cargo they transport.

Ship Management: Stores details such as ship name, capacity, registration, ownership, and status.

Container & Cargo Handling: Records information about shipping containers, their TEU capacity, cargo type, weight, and assigned ships.

Cargo Ownership: Maintains records of cargo owners and their shipments.

* ***Docking & Storage***

This module ensures efficient docking of ships and storage of cargo.

Port & Dock Management: Tracks port capacity, available docks, and ship docking schedules.

Warehouse Storage: Manages storage spaces, cargo duration, and warehouse capacity.

* ***Transportation (Land & Sea)***

To facilitate cargo movement after unloading, this module manages land transport logistics.

Train Transport: Assigns cargo to trains, records schedules, and monitors train movement.

Lorry Transport: Tracks lorry availability, driver assignments, and road transport schedules.

* ***Personnel & Workforce Management***

This module keeps records of all personnel involved in the shipping process.

Ship Crew Management: Stores crew details, ranks, and assigned ships.

Dock Workers & Operators: Manages shift schedules, work experience, and assigned ports.

Drivers: Tracks driver licenses, assigned vehicles, and work history.

* ***Ownership & Business Relations***

This module manages relationships between different business entities involved in shipping.

TEU Owners & Cargo Clients: Stores details of individuals or companies owning shipping containers and transported goods.

Shipping & Transport Companies: Maintains records of businesses providing shipping and land transport services.

* ***Financial & Billing***

To handle monetary transactions, this module tracks payments, fees, and invoices.

Port & Storage Fees: Calculates charges for ship docking and warehouse storage.

Transportation Fees: Bills for train and lorry transportation services.

Invoices & Payments: Keeps records of generated invoices, payments made, and outstanding balances.

* ***Logs & Tracking***

This module ensures transparency and real-time updates on cargo movement.

Cargo Tracking: Uses tracking numbers to monitor cargo locations and statuses.

Ship Schedules: Maintains ship arrival and departure records for efficient port scheduling.

Incident Reports: Logs accidents, delays, or security breaches affecting cargo or ships.

1. ***System Workflow***

* ***Step 1: Cargo Booking & Ship Allocation***

A client or shipping company books cargo for transport.

The system assigns a suitable container and records cargo details.

The cargo is loaded onto an available ship.

* ***Step 2: Ship Movement & Docking***

The ship departs from the origin port.

The system tracks its journey and updates estimated arrival times.

The ship docks at the destination port upon arrival.

* ***Step 3: Unloading & Storage***

Cargo is unloaded and stored in a warehouse or assigned to land transport.

The system updates storage details and calculates fees.

* ***Step 4: Land Transportation***

The cargo is assigned to a train or lorry for final delivery.

The system tracks transport progress and estimated delivery times.

* ***Step 5: Financial Transactions & Billing***

The system calculates port, storage, and transport fees.

Invoices are generated and sent to the client.

Payments are processed, and financial records are updated.

* ***Step 6: Tracking & Reporting***

Clients and administrators can monitor cargo status in real time.

Reports are generated for business insights and auditing.

1. ***Benefits of the System***

Efficiency: Automates key processes, reducing manual workload.

Transparency: Real-time tracking ensures cargo security.

Cost Management: Proper invoicing and fee calculations prevent revenue loss.

Scalability: Can be expanded to support more ports, ships, and transport options.

Business Insights: Reports help companies make data-driven decisions.

1. ***Our Client***

**Company Name:**

Mareven Food Central LLC

**Category:**

[Food, Kitchen and Hotel Supplies](https://abdas.org/business-directory/wpbdp_category/food-kitchen-and-hotel-supplies/)

**Business Description:**

Mareven Food Central LLC, which was established in 1999 in Russia, is a subsidiary of the international group Mareven Food Holdings Ltd. They are specialized in the production and distribution of food and beverages. They supply their products to 85 constituent entities of the Russian Federation and seven countries around the world. Some of their products are energy drinks, chips, noodles, ready-made meals, and dairy products.

1. ***Commercial Viability & Revenue Model***

**Revenue Generation**

FleetFloat will generate revenue through:

* **Subscription-based model** – Monthly or annual fees for different service tiers.
* **Transaction-based fees** – Charges on each processed shipment or customs clearance.
* **Freemium model** – Basic features free, with premium features (advanced analytics, AI-driven tracking) available via subscription.
* **Advertisement & partnerships** – Collaborations with freight forwarders, shipping insurers, and logistics service providers.

***Competitor Analysis & Differentiation***

|  |  |  |
| --- | --- | --- |
| **Competitor** | **Weaknesses** | **FleetFloat Advantage** |
| Maersk Line Systems | Limited to Maersk’s ecosystem | Open platform for all shipping companies |
| Flexport | High pricing | Affordable pricing with scalable plans |
| CargoWise | Complex UI & difficult integration | User-friendly interface and seamless API integration |

FleetFloat stands out by offering real-time tracking, AI-driven efficiency optimization, and seamless integration across different shipping stakeholders.

***Budget Considerations***

Initial Development Cost: $200,000

Marketing & Customer Acquisition: $50,000

Cloud & Server Infrastructure: $100,000/year

Operational Costs: $70,000/year

1. ***Methodology***

**Development Approach**

FleetFloat will follow the **Agile Development methodology,** which includes:

**Sprint-based iterations** – Weekly updates and incremental feature releases.

**CI/CD pipeline** – Continuous integration & deployment for real-time improvements.

**User-centred design** – UX/UI testing with feedback loops for seamless user experience.

***Step-by-Step Development Plan***

* Phase 1: System design & database structuring
* Phase 2: Frontend & backend development
* Phase 3: AI integration for real-time tracking & optimization
* Phase 4: Beta testing & pilot launch
* Phase 5: Full-scale deployment & continuous improvement

***Progress & Success Metrics***

User adoption rate (number of registered companies)

Reduction in operational inefficiencies (shipping delays, workforce optimization)

Revenue growth over time

Customer satisfaction & retention

1. ***Conclusion***

The Shipping Support System is a vital tool for optimizing the shipping industry. By integrating ship management, docking, transportation, workforce handling, and financial transactions, it enhances efficiency, reduces delays, and improves overall logistics operations.

This system is ideal for shipping companies, port authorities, logistics providers, and cargo owners looking for a centralized and automated shipping management solution.