# BUSINESS REQUIREMENT DOCUMENT

## Project Name:

Real-Time Supply Chain Visibility Platform Implementation

## Project Objective:

To implement a centralized platform providing real-time visibility into shipments, inventory management, and supply chain operations to optimize decision-making, improve operational efficiency, reduce costs, and enhance customer satisfaction.

## Project Justification:

The company’s current supply chain management processes are inefficient due to a lack of real-time visibility into shipments and inventory levels, leading to delays, increased costs, and customer dissatisfaction. A centralized platform will address these issues by enabling real-time data exchange,

improving communication, and enhancing supply chain transparency.

## Business Problem:

The existing supply chain lacks real-time visibility, resulting in:

- Shipment delays due to unforeseen disruptions.
- Inaccurate inventory levels, leading to stockouts or overstocking.
- Poor communication between internal teams and external partners (suppliers and carriers).
- Inability to make data-driven, proactive decisions.
- High operational costs and low customer satisfaction due to reactive management.

## AS-IS State:

- **Processes:** Manual tracking of shipments and inventory using spreadsheets and emails.

- **Technology:** Disparate systems with no centralized platform for supply chain visibility.
- **Data Management:** Inconsistent, manually updated data across systems.
- **Communication:** Siloed communication with external partners, often reactive.
- **Performance:** High costs and inefficiencies due to lack of visibility and real-time tracking.

### TO-BE State:

- **Processes:** Automated tracking of shipments and inventory updates.
- **Technology:** A centralized real-time visibility platform integrated with internal and external systems.
- **Data Management:** Standardized, real-time data exchange across all systems.
- **Communication:** Proactive, real-time collaboration with external partners.

- **Performance:** Reduced operational costs, improved efficiency, and increased customer satisfaction through enhanced decision-making.

## Project Stakeholders:

- **Project Sponsor:** Chief Operations Officer (COO)
- **Project Manager**
- **Business Analyst**
- **IT Department**
- **Supply Chain Team**
- **Warehouse Managers**
- **External Suppliers and Carriers**
- **Sales and Customer Service Teams**
- **Regulatory Authorities**

## RACI Matrix:

| Activity | Respo nsible | Accou ntable | Consulted | Infor med |
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|---|---|---|---|---|
| Requirements Gathering | Business Analyst | Project Manager | Supply Chain, IT Dept. | Stakeholders |
| Platform Design | IT Dept. | Project Manager | Business Analyst, Vendors | Stakeholders |
| Vendor Selection | Business Analyst | Project Sponsor | IT Dept., Procurement | Stakeholders |
| Integration Development | IT Dept. | Project Manager | External Suppliers/Carriers | Stakeholders |
| Testing and QA | IT Dept. | Project Manager | Business Analyst | Stakeholders |

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|---|---|---|---|---|
| User Training and Documentation | Business Analyst | Project Manager | Supply Chain Team | All Users |
| Post-Implementation Support | IT Dept. | Project Manager | Business Analyst | Stakeholders |

## Project In-Scope Use Case:

- Implementation of a platform for real-time tracking of shipments and inventory.
- Integration with suppliers' and carriers' systems for seamless data exchange.
- Real-time dashboards for monitoring supply chain performance.
- Notifications for shipment delays, inventory thresholds, and operational exceptions.
- User training and platform adoption support.

## Project Out-of-Scope Use Case:

- Redesign of physical supply chain networks (e.g., logistics routes).
- Replacement of existing ERP or Warehouse Management Systems (WMS).
- Development of in-house hardware for tracking (RFID, GPS, etc.).
- Changes to supplier/carrier contracts.

## Business Requirements:

1. **BR1:** The platform shall provide real-time visibility for shipments and inventory across all supply chain nodes.
2. **BR2:** It shall integrate with existing ERP and WMS systems as well as external carriers' systems.
3. **BR3:** The platform shall generate real-time alerts for shipment delays and inventory thresholds.
4. **BR4:** It shall improve inventory accuracy to 99% within the first 6 months.

5. **BR5:** The platform shall provide dashboards with key performance indicators (KPIs) for supply chain efficiency.

## Functional Requirements:

1. **FR1:** The platform must allow users to track shipment status in real-time.
2. **FR2:** It must automatically update inventory levels based on real-time inputs.
3. **FR3:** The system shall support user roles with customizable access levels (Admin, User, Supervisor).
4. **FR4:** It must provide alerts and notifications for shipment delays, stockouts, and critical supply chain events.
5. **FR5:** The system must allow users to generate custom reports and export data in multiple formats (CSV, Excel, PDF).

## Non-Functional Requirements:

1. **NFR1:** The platform must have 99.9% uptime to ensure business continuity.
2. **NFR2:** The system must process data updates in less than 2 minutes after they occur.
3. **NFR3:** The platform shall comply with industry-standard data security protocols (ISO 27001).
4. **NFR4:** It must support up to 1,000 concurrent users without performance degradation.
5. **NFR5:** The system should be designed to minimize user training time by having an intuitive user interface.

## API Requirements:

1. **API1:** The platform must provide RESTful APIs for integration with external carrier systems.
2. **API2:** All APIs must support secure authentication mechanisms, including OAuth 2.0.
3. **API3:** APIs must handle real-time data processing and support batch updates for legacy systems.

4. **API4:** APIs must return data in standard formats such as JSON.

## Integration Requirements:

1. **IR1:** Integration with ERP and WMS systems to sync inventory data.
2. **IR2:** Integration with external suppliers' and carriers' systems to collect shipment data.
3. **IR3:** Support for EDI (Electronic Data Interchange) for data exchange with legacy partners.
4. **IR4:** Integration with analytics tools for supply chain performance reporting.

## Database Requirements:

1. **DB1:** The database must store shipment, inventory, and partner data for at least 7 years for regulatory compliance.
2. **DB2:** Data replication and backup mechanisms must be in place to prevent data loss.

3. **DB3:** The database must enforce data integrity and allow real-time data queries.
4. **DB4:** The system must be scalable to accommodate data growth over the next decade.

## Transition Requirements:

1. **TR1:** Develop a phased migration plan from the current manual systems to the new platform.
2. **TR2:** Ensure data migration from legacy systems to the new platform is accurate and complete.
3. **TR3:** Provide comprehensive training to all users (warehouse managers, supply chain team, etc.).
4. **TR4:** Establish a support system for addressing post-implementation issues.

## Data Dictionary:

- **ShipmentID:** Unique identifier for each shipment.
- **OrderID:** Unique identifier for each customer order.
- **ProductID:** Unique identifier for each product.

- **LocationCode:** Code for a specific warehouse or distribution center.
- **Status:** Current status of the shipment (e.g., In Transit, Delivered).
- **ETA:** Estimated Time of Arrival for shipments.
- **InventoryLevel:** Current stock level of a product at a specific location.

## Project Risks:

1. **Risk1:** Integration challenges with external partners' systems.
    a. *Mitigation:* Conduct a thorough technical assessment of all partners' systems before integration.
2. **Risk2:** Resistance to adopting the new platform from internal and external users.
    a. *Mitigation:* Provide change management support and user training.
3. **Risk3:** Data security breaches during API exchanges.

    a. *Mitigation:* Implement robust encryption and security protocols.
4. **Risk4:** Project delays due to external vendor dependencies.
    a. *Mitigation:* Establish clear timelines and SLAs with all vendors.

## Project Dependencies:

1. **Dependency1:** Availability of APIs or data exchange mechanisms from external carriers.
2. **Dependency2:** Completion of internal system upgrades to support integration.
3. **Dependency3:** Timely procurement of hardware and software from third-party vendors.
4. **Dependency4:** Compliance with industry regulations and standards for data handling.

## Project Issues:

1. **Issue1:** Some suppliers' systems are not compatible with real-time API integration.

    a. *Resolution:* Support batch processing for legacy systems while encouraging future upgrades.
2. **Issue2:** Inconsistent data formats from different external partners.
    a. *Resolution:* Implement a data normalization process to standardize inputs.
3. **Issue3:** Delays in data transmission due to network issues.
    a. *Resolution:* Upgrade network infrastructure and establish a data transmission monitoring system.

## Project Constraints:

1. **Constraint1:** The project must be completed within 12 months.
2. **Constraint2:** The budget is limited to $2 million.
3. **Constraint3:** The platform must be compliant with industry-specific data privacy and security regulations.

## Project Assumptions:

1. **Assumption1:** All external partners (suppliers, carriers) will agree to integrate with the platform.
2. **Assumption2:** The required technical resources (personnel, equipment) will be available as scheduled.
3. **Assumption3:** There will be no major changes in regulatory requirements during the project lifecycle.

## Glossary:

- **API (Application Programming Interface):** A set of protocols for building and interacting with software applications.
- **EDI (Electronic Data Interchange):** The electronic exchange of business documents between organizations.
- **ERP (Enterprise Resource Planning):** Software that manages business processes in real-time.

- **WMS (Warehouse Management System):** Software that supports the management of warehouse operations.
- **Supply Chain Visibility:** The ability to track the movement of products, materials, and inventory across the supply chain.
- **IoT (Internet of Things):** A network of physical objects embedded with sensors and software for data exchange.