ORDER, INVENTORY & PROCUREMENT AUTOMATION SYSTEM

Business Requirements & System Documentation

Project Type: Enterprise Resource Planning (ERP) - Lightweight Implementation **Platform:** Google Sheets **Date:** January 2026 **Classification:** Business Requirements Document

EXECUTIVE SUMMARY

This document outlines the business requirements and system design for an automated Order, Inventory, and Procurement Management System. The solution addresses critical operational inefficiencies in order processing, inventory management, warehouse operations, and procurement workflows.

The system automates manual processes, eliminates errors, and provides real-time visibility across all operations. Built on Google Sheets, it delivers enterprise-level functionality without the high costs and complexity of traditional ERP systems.

Expected Outcomes: - Elimination of duplicate and missed orders - Real-time inventory accuracy across multiple warehouses - Automated procurement based on stock levels - Reduced manual coordination between departments - Complete operational visibility and audit capability

1. BUSINESS PROBLEM

1.1 Current Challenges

The organization currently operates with disconnected manual processes that create significant operational problems:

Order Management Issues: - Orders are processed twice or completely missed - No systematic tracking of order status - Manual verification required for every order

Inventory Management Issues: - Overselling products due to inaccurate stock data - No visibility of stock across different warehouse locations - Stock deductions done manually, leading to errors

Warehouse Operations Issues: - No prioritization based on customer location - Unbalanced inventory distribution across warehouses - Manual coordination required for stock transfers

Procurement Issues: - Delayed purchase orders resulting in stockouts - Duplicate purchase orders to same suppliers - No automated tracking of minimum stock levels

Finance & Communication Issues: - Excessive manual follow-ups with suppliers - Finance team notified before goods are actually received - No record of who performed which action

1.2 Business Impact

These problems result in: - Lost revenue from missed orders and stockouts - Increased costs from duplicate orders and excess inventory - Customer dissatisfaction from delayed deliveries - High operational overhead from manual coordination - Compliance risks from lack of audit trails

2. PROPOSED SOLUTION

2.1 Solution Overview

A centralized, automated system that manages the complete order-to-delivery lifecycle. The system operates on Google Sheets, making it accessible, cost-effective, and easy to maintain.

Core Principle: Replace manual processes with rule-based automation that ensures consistency, accuracy, and complete traceability.

2.2 Key Capabilities

• **Automated Order Processing:** System reads orders, checks inventory, and allocates stock automatically
• **Multi-Warehouse Inventory Management:** Real-time tracking of stock across all locations
• **Smart Fulfillment:** Orders are fulfilled from the nearest warehouse based on customer location
• **Automatic Stock Balancing:** System moves stock between warehouses to prevent imbalances
• **Automated Procurement:** Purchase orders are created automatically when stock is low
• **Goods Receipt Management:** Inventory updated automatically upon supplier delivery
• **Finance Notification:** Finance team notified only after goods are received
• **Complete Audit Trail:** Every action is logged with user details and timestamp

3. BUSINESS PROCESS FLOW

3.1 Order-to-Delivery Process

Step 1: Order Receipt - Customer order is entered into the system - System validates order details

Step 2: Inventory Check - System checks product availability across all warehouses - Determines which warehouse(s) can fulfill the order

Step 3: Order Allocation - Stock is allocated from the preferred warehouse (based on customer region) - If stock unavailable, system automatically checks other warehouses - Partial fulfillment is supported if complete order cannot be satisfied

Step 4: Inventory Update - Stock is deducted from the warehouse - Order status updated (Completed/Partial/Rejected) - Revenue and profit calculated automatically

3.2 Procurement Process

Step 1: Stock Monitoring - System continuously monitors total stock levels - Compares against predefined minimum thresholds

Step 2: Purchase Order Creation - When stock falls below threshold, purchase order is created automatically - System applies minimum order quantity rules - Supplier lead time is considered for delivery planning

Step 3: Goods Receipt - When supplier delivers goods, warehouse staff enters receipt information - System updates inventory automatically - Purchase order marked as complete

Step 4: Finance Notification - Finance team is notified for payment processing - Notification sent only after goods are fully received and verified

3.3 Warehouse Balancing Process

Step 1: Imbalance Detection - System identifies warehouses with excess stock - System identifies warehouses with insufficient stock

Step 2: Transfer Execution - Stock is moved from overstocked to understocked warehouses - Transfers done in controlled batches - Both warehouse inventories updated automatically

4. SYSTEM MODULES

4.1 Order Processing Module

Purpose: Automate complete order handling from receipt to fulfillment

Functions: - Read new orders from central sheet - Prevent duplicate processing of same order - Validate product availability - Allocate stock based on regional preference - Update order status and inventory - Calculate financial metrics

Business Benefit: Eliminates manual order processing errors and ensures consistent handling

4.2 Inventory Management Module

Purpose: Maintain accurate stock records across all warehouses

Functions: - Track stock levels for each product at each warehouse - Ensure stock deductions are accurate and atomic - Prevent negative inventory situations - Provide real-time stock visibility

Business Benefit: Prevents overselling and provides accurate inventory data for decision-making

4.3 Regional Fulfillment Module

Purpose: Optimize order fulfillment based on customer location

Functions: - Match customer region to nearest warehouse - Automatically use alternate warehouses when needed - Support multi-warehouse fulfillment for large orders

Business Benefit: Reduces delivery time and shipping costs

4.4 Warehouse Rebalancing Module

Purpose: Maintain optimal inventory distribution across locations

Functions: - Monitor inventory levels at all warehouses - Identify imbalanced stock situations - Execute stock transfers automatically - Update inventory records for both source and destination

Business Benefit: Prevents stockouts in high-demand locations and reduces carrying costs

4.5 Procurement Module

Purpose: Automate purchase order creation and management

Functions: - Monitor aggregate stock across all warehouses - Compare against reorder thresholds - Create purchase orders with correct quantities - Apply supplier-specific rules (minimum order quantity, lead time) - Prevent duplicate purchase orders

Business Benefit: Ensures timely procurement without manual monitoring or duplicate orders

4.6 Goods Receipt Module

Purpose: Manage supplier deliveries and inventory updates

Functions: - Record goods received from suppliers - Update warehouse inventory automatically - Close purchase orders when fully received - Trigger finance notification for payment

Business Benefit: Ensures inventory accuracy and timely payment to suppliers

4.7 Audit & Alert Module

Purpose: Provide visibility and traceability of all operations

Functions: - Log all system actions with timestamps - Record user attribution for each action - Send email alerts for critical situations only - Maintain complete audit trail

Business Benefit: Enables troubleshooting, ensures compliance, and prevents information overload

5. BUSINESS RULES & CONTROLS

5.1 Data Integrity Controls

• Only one process can update inventory at a time (prevents conflicts)
• All stock deductions are validated before execution
• Negative inventory is not permitted
• Every order is assigned a unique identifier

5.2 Operational Rules

• Regional warehouse preference is always applied first
• Partial order fulfillment is allowed when full quantity unavailable
• Stock transfers respect minimum and maximum thresholds
• Purchase orders created only when aggregate stock is below threshold

5.3 Financial Controls

• Revenue and cost calculated for every order
• Finance notified only after goods receipt confirmation
• Complete transaction history maintained for audit

5.4 Alert Management

• Alerts categorized by severity level
• Email notifications sent only for high-priority events
• All actions logged regardless of alert level

6. EXPECTED BENEFITS

6.1 Operational Efficiency

Order Management: - 100% order tracking with no missed or duplicate orders - Automatic stock allocation reduces processing time - Partial fulfillment capability improves customer satisfaction

Inventory Management: - Real-time stock visibility across all locations - Automated stock balancing optimizes inventory distribution - Accurate data supports better planning and forecasting

Procurement: - Automatic purchase orders eliminate manual monitoring - Reduced stockout situations - Better supplier relationship through timely, accurate orders

6.2 Cost Savings

• Reduced inventory carrying costs through better distribution
• Lower shipping costs from optimized fulfillment
• Eliminated duplicate orders and excess procurement
• Minimal implementation cost compared to traditional ERP
• No ongoing licensing fees

6.3 Risk Reduction

• Complete audit trail supports compliance requirements
• Automatic controls prevent overselling
• Finance pays only after goods receipt verification
• Systematic processes reduce dependency on individual knowledge

6.4 Scalability

• System handles increasing order volumes without additional manual effort
• Rules can be updated as business requirements evolve
• New warehouses can be added to the system easily
• Additional products integrated without system changes

7. IMPLEMENTATION APPROACH

7.1 Technical Components

Order Processing Engine - Reads and processes orders from central repository - Implements stock allocation logic - Updates all related records

Locking Mechanism - Ensures data integrity during concurrent operations - Prevents race conditions and data corruption

Stock Transfer Engine - Analyzes inventory distribution - Executes controlled transfers between warehouses

Purchase Order Engine - Monitors stock levels - Creates and manages supplier purchase orders

GRN Processing Module - Handles goods receipt workflows - Updates inventory and closes purchase orders

Audit Framework - Logs all system activities - Manages alert distribution

7.2 Configuration Requirements

• Product master data (product codes, names, costs)
• Warehouse locations and regional mappings
• Reorder points and minimum order quantities
• Supplier information and lead times
• User email addresses for notifications
• Stock transfer thresholds and batch sizes

8. COMPARISON WITH TRADITIONAL ERP

Aspect	Traditional ERP	This System
Implementation Cost	$500,000 - $5,000,000+	Minimal (development only)
Licensing	Annual fees of $100,000+	Zero
Implementation Time	6-24 months	4-8 weeks
User Training	Extensive training required	Familiar spreadsheet interface
Customization	Expensive, requires consultants	Configuration-based, business users can modify
Maintenance	Ongoing IT support needed	Maintainable by business users
Deployment	Complex infrastructure	Cloud-based, accessible anywhere

Core ERP Functions Delivered: - Order lifecycle management - Multi-location inventory control - Automated procurement - Financial integration - Audit and compliance capabilities

9. SUCCESS CRITERIA

The system will be considered successful when:

Operational Metrics: - Zero duplicate or missed orders - Inventory accuracy above 98% - Purchase orders created within 24 hours of reaching threshold - Stock transfers executed within defined thresholds

Business Metrics: - Reduction in manual coordination time by 80% - Decrease in stockout situations by 70% - Improvement in order fulfillment time by 40% - Complete audit trail for 100% of transactions

User Adoption: - All order processing staff using the system - Finance team receiving automated notifications - Management accessing audit reports regularly

10. CONCLUSION

This Order, Inventory & Procurement Automation System addresses critical operational challenges through systematic automation. By implementing rule-based processes, the system eliminates manual errors, provides real-time visibility, and ensures complete traceability.

The solution delivers enterprise-grade functionality without the complexity and cost of traditional ERP systems. Built on Google Sheets, it is accessible, maintainable, and scalable, making it an ideal solution for organizations seeking operational efficiency without significant capital investment.

Key Differentiators: - Comprehensive automation of order-to-delivery processes - Real-time, accurate inventory across multiple locations - Proactive procurement preventing stockouts - Complete audit capability for compliance - Low cost of implementation and zero ongoing licensing fees - Familiar interface requiring minimal training

The system transforms manual, error-prone operations into a disciplined, automated framework that operates consistently and reliably, enabling the organization to scale operations without proportional increases in overhead.

END OF DOCUMENT