# Merkato Logistics Integration – Narrative Overview & Technical Proposal

## Vision

Merkato is evolving from a simple online marketplace into a smart, scalable commerce ecosystem.   
To support this growth, we are introducing a flexible logistics system that:  
- Helps vendors ship products more efficiently.  
- Gives customers a reliable and transparent delivery experience.  
- Lays the foundation for regional fulfillment hubs across Africa, Europe, and Asia.  
- Maintains the vendor-managed shipping model as a core, empowering option while adding hub-assisted fulfillment for vendors who choose it.  
- Provides vendors and admins with the ability to set and adjust delivery times to reflect real-world conditions.

## Why Logistics Matters

Vendor-managed shipping is a fast, flexible, and vendor-friendly model. It gives sellers control over carriers, packaging, and delivery timelines.  
Merkato’s enhanced logistics plan builds on this proven strength by offering an additional hub-assisted fulfillment option, giving vendors and customers more choice:  
- Vendors can choose between direct shipping or hub-supported delivery.  
- Customers can select delivery options based on speed, cost, and convenience.  
  
This combination ensures:  
- Predictable delivery times (set by vendors/admins based on context).  
- Lower shipping costs for bulk orders.  
- Streamlined returns handling.  
- Scalability for B2B and cross-border trade.

## Two-Phase Implementation Strategy

**Phase 1 – Vendor-Managed Fulfillment:**Vendors shipping directly to customers, supported by Merkato’s logistics tools:  
- Automatic shipping label generation via carrier APIs.  
- Real-time shipment tracking for vendors and customers.  
- Return request management through the app.  
- Delivery Time Setter for vendors to set delivery timelines per product/order.  
Benefits: Immediate launch, minimal disruption, low operational cost, preserves vendor control.  
  
**Phase 2 – Regional Fulfillment Hubs:**Strategic hub locations in East Africa, Southern Africa, West Africa, and Europe.  
Hub Functions: Store high-demand products for quicker delivery, provide bulk order consolidation, process returns locally, partner with trusted couriers for last-mile delivery, allow admin to set global delivery time overrides for hub-served orders.

## Best-Practice Additions

1. Service-Level Commitments (SLCs):  
**- Domestic: 2–5 days.**- Regional: 5–10 days.  
- Returns processed within 5 business days.  
- Tracking updates at least every 12 hours.  
  
**2. Vendor Support & Training:**- Onboarding materials & packaging guidelines.  
- Dedicated vendor support channel.  
- Vendor dashboard with delivery performance metrics.  
  
**3. Contingency & Peak Season Plan:**- Backup carriers for emergencies.  
- Peak season scaling with extra resources.  
- Crisis SOPs for customs delays, weather events, and disruptions.

## How It Works for users

1. **For Vendors:**
   1. Log in to vendor page
   2. Go to vendor dashboard → click Orders → Generate Shipping Label
   3. Choose Ship Direct or Ship via Hub.
   4. Set delivery time for the order (or use system default).
   5. Print label and ship.
   6. Track order and manage returns.
2. **For Customers:**2.1 Login into customer page
   1. Shope Product
   2. See delivery estimates before checkout
   3. Checkout
   4. Track orders in real time.
   5. Request returns easily.
3. **For Admins:**
   1. Monitor delivery performance and disputes

3.2 Manage hub inventory and courier partners

3.3 Override vendor delivery times in case of disruptions.

## Security & Reliability

-Secure encryption for all logistics integrations.  
- Safe API key storage.  
- Automated error handling for tracking and label issues.

## KPIs to Measure Success

- Delivery speed and on-time performance.  
- Return request rates & resolution times.  
- Hub inventory turnover (Phase 2).  
- Vendor & customer satisfaction scores.

## Testing & Rollout

1. Beta test with select vendors in East Africa.  
2. Gather performance data and feedback.  
3. Expand hubs and vendor participation in later phases.

## Technical Proposal for Development & Integration

Objectives:  
- Integrate logistics module into the existing Merkato platform.  
- Support both vendor-managed and hub-assisted fulfillment.  
- Implement Delivery Time Setter for both vendors and admins.  
- Ensure scalability for future cross-border expansion.  
  
**Scope (Integration Points):**

1. **Home Page**: Delivery Option Preview, Promotional Banner, Public Order Tracking.
2. **Vendor Page**: Shipping Label Generation, Hub Fulfillment Option, Real-Time Tracking Dashboard, Returns Management Tool, Performance Metrics Widget, Delivery Time Setter.
3. **Customer Page**: Delivery Option Selector, Order Tracking Tab, Return Request Form, Display Delivery Timeframes.
4. **Admin Page**: Unified Logistics Dashboard, Hub Inventory Management, Dispute & Escalation Management, Carrier Performance Analytics, Peak Season Controls, Global Delivery Time Setter.

**Development Phases:**Phase 1: Vendor-managed logistics tools.  
Phase 2: Hub-assisted logistics tools.  
  
**Integration Approach:**- Microservice architecture, API integrations, webhooks.  
  
**Security & Compliance:**- Encrypted API communication, role-based access, trade compliance.  
  
**Testing Plan:**- Unit & integration tests, pilot testing, stress tests.  
  
**Timeline:**- Phase 1: 6–8 weeks.  
- Phase 2: 10–12 weeks.  
  
**KPIs:**- On-time delivery % improvement, reduced return resolution time, vendor adoption rate.

## Infographic

