# Functional Requirement Document (FRD)

## Flipkart Multi-Vendor Marketplace Enhancement

## 1. Project Overview

Project Name: Flipkart Multi-Vendor Marketplace Enhancement
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### 1.1 Purpose

The purpose of this FRD is to define the functional requirements for enhancing Flipkart's multi-vendor marketplace. The document details the system functionalities, user interactions, and technical specifications required to implement new features.

### 1.2 Scope

The system should:

- Enable streamlined seller onboarding and management.
- Implement AI-powered product recommendations.
- Provide a price comparison feature for multi-seller products.
- Automate dispute resolution for returns and refunds.
- Enhance real-time order tracking and status updates.

## 2. System Features & Functional Requirements

### 2.1 Seller Onboarding & Management

Description: The system should allow sellers to register, submit business details, and manage product listings.
Functional Requirements:

- The seller registration process should include identity verification (e.g., PAN, GST, business license upload).
- Sellers should be able to add, update, and delete product listings.
- A dashboard should be provided for sellers to track sales, inventory, and returns.

### 2.2 AI-Powered Product Recommendations

Description: AI-based personalized product suggestions based on customer browsing and purchase history.

**Functional Requirements:**

- Implement a recommendation engine using customer behavioral data.
- Display suggested products on the homepage and product pages.
- Allow users to provide feedback on recommendations to improve accuracy.

## 2.3 Price Comparison Feature

Description: Customers should be able to compare multiple sellers' prices for the same product.
Functional Requirements:

- Display a comparison table of prices from different sellers.
- Highlight the best deal based on price, rating, and delivery time.
- Allow customers to filter by seller rating, return policy, and shipping time.

## 2.4 Automated Dispute Resolution for Returns

Description: AI-driven return and refund processing to improve efficiency and reduce fraud.
Functional Requirements:

- Automate return approvals based on predefined policies.
- Implement AI-based fraud detection for return abuse.
- Notify sellers and customers about return/refund status.

## 2.5 Real-Time Order Tracking

Description: Enhanced tracking system for better customer experience.
Functional Requirements:

- Provide real-time updates on order status from warehouse to delivery.
- Integrate with logistics partners for live tracking updates.
- Send push notifications to customers about delivery status.

# 3. User Roles & Permissions

| Role | Permissions |
|------|-------------|
| Seller | Manage store, add/edit/delete products, track orders |
| Customer | Browse, purchase, track orders, return items |
| Admin | Manage sellers, resolve disputes, oversee system operations |
| Logistics | Update delivery status, manage shipments |

# 4. Assumptions & Constraints

## 4.1 Assumptions

- The AI recommendation model will be trained on existing user data.
- Sellers will comply with return policies and provide accurate product details.
- Flipkart's logistics partners will provide tracking APIs for integration.

## 4.2 Constraints

- Data privacy laws must be adhered to when handling customer data.
- System downtime should not exceed 1% per month.
- The platform should handle concurrent transactions efficiently.

# 5. Performance Metrics

| Metric | Target |
|--------|--------|
| Seller Onboarding Time | Reduce by 30% |
| AI Recommendation Accuracy | Improve by 25% |
| Dispute Resolution Time | Reduce from 5 days to 2 days |
| Order Tracking Accuracy | 99% real-time updates |

# 6. Risks & Mitigation

| Risk | Mitigation Strategy |
|------|---------------------|
| AI recommendation errors | Regular model retraining and fine-tuning |
| Fraudulent returns | Implement stricter return verification policies |
| System downtime | Implement scalable cloud architecture |

# 7. Next Steps

1. **Develop wireframes & prototypes.**
2. **Conduct system testing.**
3. **Deploy in a phased manner with user feedback.**

# 8. Conclusion

The proposed enhancements aim to streamline the multi-vendor marketplace, improve seller and customer experiences, and drive platform efficiency. This FRD outlines the necessary system functionalities for implementation.

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