Section 1: Introduction

1.1 Overview

The Order Management System (OMS) is the backbone of retail store operations supporting book and general merchandise (GM) fulfillment across over 100 physical and virtual stores. This document outlines the functionality, business rules, exceptions, user interactions, and integrations that power a modern, multi-tender, multi-product vertical OMS designed for both digital and physical commerce.

1.2 Purpose of Document

This document is intended to serve as a detailed functional specification and operational guide for the OMS system. It will help stakeholders—product managers, store associates, support staff, developers, and testers—understand how the system functions across various modules such as order creation, processing, payment, and exceptions handling.

1.3 Target Audience

- **Store Associates**: Execute daily operations like picking, packing, shipping, and handling in-store payments.

- **Store Managers**: Oversee operations, approve special scenarios like refunds, and access reports.

- **Customer Support Executives**: Handle inquiries, returns, and escalations.

- **Admin/System Users**: Configure business rules, monitor integrations, and support the backend.

Section 2: Store Types and Structure

2.1 Store Types

There are two main store types in the OMS ecosystem:

- **Physical Stores**: These are brick-and-mortar stores with inventory, staff, and local fulfillment capability.

- **Virtual Stores**: These stores act as logical entities for routing orders, especially in remote areas. They don't hold physical inventory. All fulfillment happens through connected warehouses or third-party vendors.

2.2 Virtual Store Operations

- Virtual stores are assigned to certain zones or regions and primarily support order pickup and returns.

- Orders placed in a virtual store context are shipped directly from a centralized warehouse or third-party supplier.

- Store associates at virtual stores operate remotely and have limited functionality—no picking or packing operations are performed locally.

2.3 Fulfillment Centers

- Some warehouse-only facilities are integrated into OMS as fulfillment centers.

- These are primarily responsible for processing online orders and are directly connected to central inventory and shipping APIs.

Section 3: User Roles & Interfaces

3.1 Key User Roles

- **Store Associate**: Handles order fulfillment, status updates, picking, packing, and initiating returns.

- **Store Manager**: Store user can perform associates activities as well as only store user has refund rights to customer and also store manager can access reports.

- **Customer Support**: Works on the customer-facing OMS portal for addressing queries, cancellations, and exception handling.

- **Admin**: Has backend access to configure rules, user permissions, and integration settings.

3.2 Interfaces Used

- **POS System**: Used at the physical counter for real-time payments and pickups.

- **Desktop OMS UI**: Used by associates and managers for order management.

- **Handheld Devices**: Used for picking and scanning during order fulfillment.

- **Tablets (optional)**: Used in stores where desktop stations are not feasible.

Section 4: Order Creation and Flow

4.1 Order Entry Sources

- Orders can be created via:
    - Online Website
    - In-Store Kiosks
    - ERP Backends (for bulk or institutional orders)

4.2 Order Routing

- All online orders are routed directly to the individual store closest to the shipping address with available inventory.

- The system checks real-time inventory and assigns the most optimal store.

- In case of inventory unavailability, the store user can reassign the order manually to another store or fulfillment center.

4.3 Store Order Processing Flow

1. Order is received in "Ready for Backroom Pick" status.

2. Store Associate scans and picks the items using handheld.

3. Items are marked picked and moved to "Ready for Payment" or "Ready for Packing" based on the order type.

4. Payment (if required) is processed.

5. Order is packed and handed over to the shipment provider or customer.

Section 5: Payment Methods and Constraints

5.1 Accepted Payment Tenders

- Cash

- Credit/Debit Cards

- UPI

- Gift Cards

- Loyalty Points

- Vouchers

5.2 Business Rules

- Mixed tenders are **not allowed** in a single transaction.

- The payment must be completed using **only one tender type**.

- Virtual Gift Card limit: Refunds exceeding $1500 must be split into multiple gift cards.

- Cash payments for digital books are allowed but must be manually recorded in OMS for compliance.

- Tender restrictions may apply for specific product types (e.g., no loyalty redemption on digital goods).

Thanks for checking—I'll continue right now with the next sections in the same detailed format. Here's the next set:

Section 6: Product Verticals and Fulfillment Rules

6.1 Supported Product Verticals

1. **General Merchandise (GM)**: T-shirts, stationery, electronics, etc.

2. **Textbooks**: Academic books—new or used, purchased or rented.

3. **Digital Books**: eBooks or digital content; no physical fulfillment.

4. **Dropship**: Third-party products shipped directly to the customer.

5. **Rental**: Books rented for a fixed term with return and penalty policies.

6.2 Fulfillment Characteristics by Vertical

Product Type	Requires Picking	Requires Shipping	Pickup Allowed	Virtual Store Support	Tender Constraints
GM	Yes	Yes	Yes	Yes	All tenders
Textbooks	Yes	Yes	Yes	Yes	All tenders
Digital Books	No	No	No	Yes	No gift card or cash allowed
Dropship	No (external)	Yes	No	Yes	No in-store pickup
Rental	Yes	Yes (and return)	Yes	Partial	Refunds only post-return check

6.3 Business Logic Constraints

- **Dropship orders** cannot be picked by store associates; fulfillment is managed via integration with vendor API.

- **Digital content** is activated upon payment and requires no physical inventory.

- **Rental returns** are tracked via overdue mechanisms; store users get alerts for late returns.

Section 7: Inventory Handling and Backroom Operations

7.1 Inventory Visibility

- Each store has visibility only to its own inventory unless system override is provided.

- Virtual stores do not manage live inventory but rely on fulfillment centers.

7.2 Picking Process

- Orders appear in "Ready for Backroom Pick".

- Handheld scanners are used to pick each item.

- Items are scanned to confirm match; mismatches result in exception prompts.

7.3 Exceptions During Picking

- **Short Pick**: If item is damaged or missing.

- **Wrong SKU**: Flagged when barcode does not match.

- **Out-of-Stock**: Order routed to another store or cancelled with notification.

7.4 Putback Process

- If payment is not completed or customer cancels after picking, items are "Putback" to shelf.

- System moves stock back to available inventory automatically upon associate's confirmation.

Section 8: Packing and Shipping

8.1 Packing Flow

- Orders with completed payments move to "Ready for Packing".

- Associate packs items and confirms package.

- OMS tracks packing completion with timestamp and associate ID.

8.2 Shipping Modes

- **Standard Shipping**: Free for orders > $100.

- **Premium Shipping**: Paid shipping; customer selects at checkout.

- **Store Pickup**: Customer picks up in person.

8.3 Constraints and Charges

- Orders below $100 attract shipping charges unless it's a store pickup.

- Premium shipping incurs extra charges, always shown during checkout and captured in OMS.

8.4 Shipping Exceptions

- **Address Invalid**: OMS flags address errors and halts shipping.

- **Lost in Transit**: Can be marked by associate or triggered by tracking system integration.

- **Return to Origin (RTO)**: Orders undelivered are routed back; OMS updates order status and inventory after manual or API trigger.

Section 9: Returns and Refunds

9.1 Return Process

- Returns can be initiated in-store or online.

- Associates scan returned item, verify condition, and process return.

- For rental products, return date and damage check are mandatory before accepting return.

9.2 Refund Process

- Refund tender matches original tender, except for:

    - **Gift cards exceeding $1500**: OMS splits refund across multiple gift card requests.

    - **Cash Refunds**: Manual approval required if amount exceeds $200.

- Refunds can be instant (UPI, gift cards) or delayed (bank transfers, credit cards).

9.3 Return Exceptions

- **No Receipt**: Requires manager override.

- **Return after 30 Days**: Allowed for rentals with penalty; others require justification.

- **Partial Return**: Allowed only if item SKU supports partial fulfillment.

Continuing with the next set of sections:

Section 10: Exception Flows and Error Handling

10.1 Order Processing Exceptions

Scenario	Trigger Event	System Behavior	Store Action Needed
Bulk Hold Release – Status Mismatch	Order line in wrong initial status	OMS moves to "In-Progress" instead of "Picking"	Manual intervention needed
Payment Failed Post Picking	Payment unsuccessful after item picked	Item put in "Putback"	Reattempt payment or putback
Multiple Shipments for One Order	Partial picking or item OOS	Split shipments created	Track shipment status separately
Gift Card Not Allowed for Product	Product not eligible for gift card tender	Error shown to store user	Prompt user to select another

10.2 Payment Exceptions

- **Over Threshold Refunds**: For VGC refunds > $1500, OMS sends multiple requests to Fiserv (max $1500 each).

- **Invalid Tender Mapping**: System flags unmatched tender types and blocks processing.

- **Mixed Tender Conflicts**: OMS ensures proper allocation between UPI + Gift Card + Credit Card, and blocks unsupported mixes.

10.3 Shipping Exceptions

- **Carrier Integration Failures**: OMS retries with alternate carrier or flags for manual shipment.

- **Incorrect Shipping Label**: User can cancel shipping label and regenerate.

- **Pickup Missed**: OMS sends automated reminder if customer has not picked up within 3 days.

Section 11: Reporting and Audit Trails

11.1 Store-Level Dashboards

- **Order Volume**: Daily, weekly, monthly order counts.

- **Fulfillment Efficiency**: % of orders picked, packed, and shipped on time.

- **Payment Mix**: Tender type breakdown.

- **Cancellation & Return Rate**: Tracked per product vertical.

11.2 OMS System Logs

- Every action is audit-logged with:

    - Associate ID

    - Timestamp

    - Event Type (Pick, Pack, Payment, Return, etc.)

- Logs available for 90 days and exportable via admin console.

11.3 Exception Reports

- **Missed Picks**: Orders with picking failures.

- **Payment Reattempts**: List of orders with failed payment retries.

- **Putback Summary**: Items put back by store with reasons.

Section 12: Store User Roles and Access Management

12.1 User Roles

Role	Permissions
Associate	View orders, pick/pack items, initiate payments, returns
Supervisor	All associate actions + override returns, authorize refunds over limit
Manager	Configure shipping rules, view reports, manage inventory, full system access

12.2 Role-Based Access Control (RBAC)

- All UI screens, API calls, and actions are gated by role.

- Sensitive actions like refund over $200 or rental overdue override require Supervisor+.

12.3 User Audit Trail

- All store user actions tracked with timestamp and device ID.

- Reports can be exported to monitor performance or detect misuse.

Section 13: Integrations and APIs

13.1 External Integrations

- **Fiserv**: For payment processing including gift cards, VGC refund, credit card.

- **Shipping Carrier APIs**: FedEx, UPS, DHL for shipping label generation and tracking.

- **Vendor API** (Dropship): External fulfillment partner for dropship order handling.

13.2 Internal Integrations

- **ERP/WMS**: Syncs product inventory, status, and location.

- **Customer Portal**: Exposes order status, cancellation, and returns options for customers.

- **Accounting System**: For reconciliation of payment and refund records.

13.3 API Handling Rules

- Retries implemented for failed payment and shipping calls.

- API response timeout capped at 10 seconds.

- Webhooks used for carrier updates and payment confirmation.

Continuing with the final sections:

Section 14: Business Rules and Configuration Settings

14.1 Fulfillment Rules

- **Picking Sequence**: OMS supports FIFO (first in, first out) strategy for order picking within store.

- **Inventory Check**: Picking not allowed if inventory on hand < ordered qty.

- **Split Shipment Logic**: Automatically triggers when some order lines are OOS.

- **Pack from Same Store**: Multi-line order items should be packed from same location if possible to reduce shipping cost.

14.2 Payment Rules

- **Tender Limits**: VGC capped at $1500 per request; OMS will split automatically.

- **Mixed Tenders**: Gift card + Credit card supported; Cash + Gift card not supported.

- **Refund Method Matching**: Refund is attempted using same tender used during payment (e.g., Gift Card refund for Gift Card payment).

14.3 Shipping Rules

- **Free Shipping Threshold**: Enabled only if order total > $100 (excluding tax).

- **Premium Shipping**: Store to prompt customer and add premium fee before payment if requested.

- **Virtual Stores**: Only shipping supported, no pickup enabled.

14.4 Store Configuration Parameters

Config Key	Description	Sample Value
MIN_ORDER_FOR_FREE_SHIP	Threshold for free shipping eligibility	$100
ENABLE_MIXED_TENDER	Allow more than one payment method	True
PREMIUM_SHIPPING_COST	Additional cost for express/premium delivery	$9.99
ALLOW_SPLIT_SHIPMENTS	Enables shipment per fulfillment line	True
VGC_MAX_PER_REQUEST	Max virtual gift card value per request to Fiserv	$1500

Section 15: Glossary and Appendix

15.1 Glossary

Term	Description
OMS	Order Management System
GM	General Merchandise
VGC	Virtual Gift Card

Term	Description
OOS	Out of Stock
FIFO	First-In First-Out picking method
Split Shipment	When an order is shipped in multiple parcels based on item availability
Putback	Process of returning picked item to shelf/inventory
Mixed Tender	Using more than one payment method in a single order
Dropship	Order fulfilled directly by vendor, not the store
Virtual Store	Online-only store; does not support in-person pickup

15.2 Assumptions Made

- All stores are live with OMS and integrated with POS and Inventory Management Systems.

- Store associates are trained on OMS flows and exception handling.

- Payment and shipping partners (e.g., Fiserv, FedEx) support necessary APIs and uptime SLAs.

- Customer service team has access to OMS backend for order lookup and manual intervention.

15.3 Appendix

- **List of Supported Tender Types**: Cash, Credit Card, Debit Card, UPI, Gift Card, Virtual Gift Card

- **Product Verticals Handled by OMS**:
  - Textbooks
  - General Merchandise (GM)
  - Rentals
  - Dropship
  - Digital Products

- **Customer Order Status Codes**:
  - PLACED
  - READY_FOR_PICK
  - PICKED
  - PACKED
  - SHIPPED

- o DELIVERED
- o CANCELLED
- o RETURNED

.