End-to-End E-Commerce Shipment Process

A maximum-detail operational guide covering every stage from product creation and customer click through warehouse fulfilment, carrier handover, last-mile delivery, returns, refund, and inventory reintegration — built for operations managers, supply-chain logisticians, and systems architects.

COMPLETE PROCESS REFERENCE

32 STAGES

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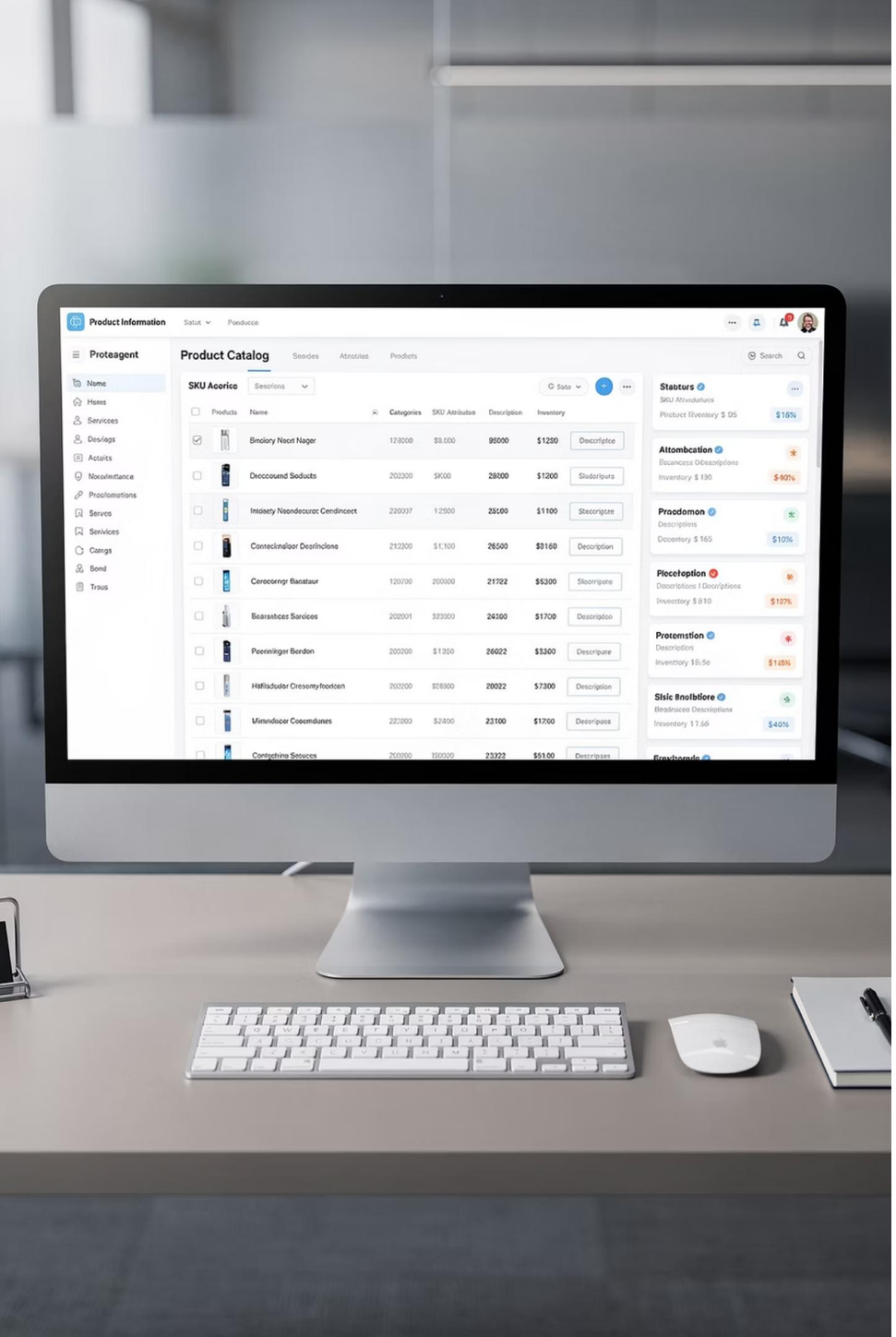
ADDING VALUE IS THE KEY.



🧩 Stage 0 — Product & Platform Setup

0.1 Product Creation

Before a single order can be placed, every SKU must be fully configured in the Product Information Manager (PIM) and pushed downstream. Incomplete or inaccurate product data is one of the most common root causes of fulfilment errors, compliance failures, and carrier rejections.

Micro-Steps

- Create SKU in PIM with full attribute set: title, description, images, size, colour, weight, dimensions
- Define HS code, country of origin, dangerous goods classification, battery information, serial number requirements
- Push to OMS, WMS, and marketplace feeds (Amazon, eBay, Zalando)

Controls

→ Attribute Completeness

All mandatory fields validated before activation

→ Compliance Checks

DG classification, battery rules, restricted items

→ Image Quality

Minimum resolution, background, and angle standards

0.2 Inventory Setup

Once product records exist in the WMS, inbound stock must be physically received, validated, and slotted before it becomes available to sell. Each step in this sequence directly affects pick accuracy, FIFO/FEFO compliance, and available-to-promise (ATP) reliability.

Receive Inbound Stock

Validate against the Advance Shipping Notice (ASN); flag discrepancies immediately

Receiving & Put-Away

Scan every unit, assign bin locations, execute slotting optimisation for pick efficiency

OMS / WMS Update

Inventory records updated in real time; ATP and reservation logic activated

Cycle Counting

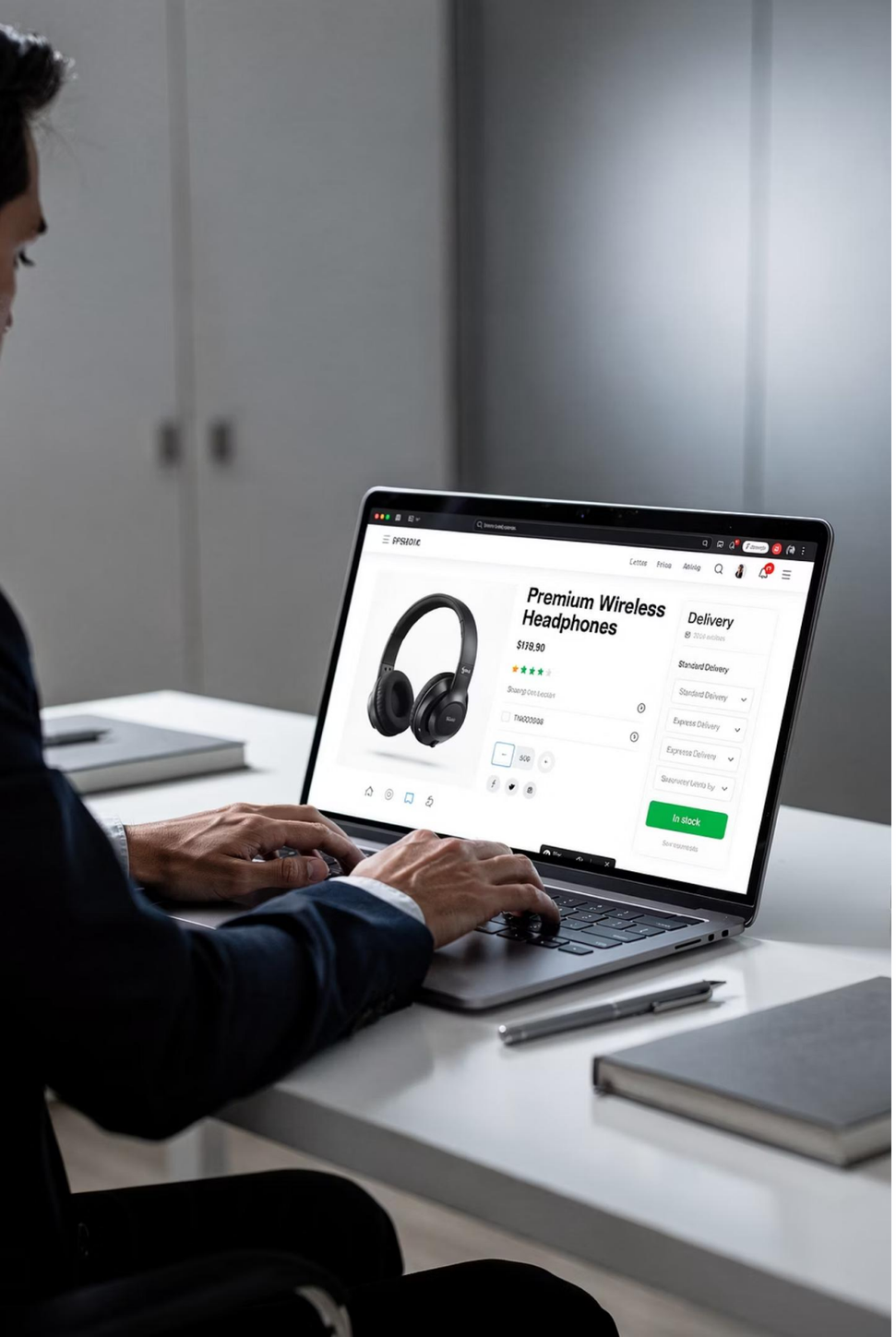
Regular perpetual counts to maintain bin accuracy

Bin Accuracy

Location confirmations at every put-away event

FIFO / FEFO

Rotation rules enforced at slotting and pick time



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Stage 1 — Customer Order Placement

1.1 Browsing & Cart

The customer journey begins the moment a shopper lands on a product page. Behind the scenes, real-time stock data is pulled from the OMS/WMS, and the delivery promise engine fires immediately to surface accurate cut-off times, delivery speed options, and estimated delivery dates — all of which directly influence conversion.

Real-Time Stock Query

OMS/WMS availability checked per page load or cart action; prevents overselling

Delivery Promise Engine

Calculates cut-off time, available service levels, and EDD based on origin warehouse and destination postcode

Stock Reservation

Soft-reserve applied on cart add; hard reserve on checkout initiation

Fraud Scoring

Early signals (device fingerprint, IP, velocity) scored before checkout begins

1.2 Checkout

Checkout is the highest-friction step in the order journey. Every validation that fires here — address, payment, carrier availability — must be both accurate and near-instantaneous. Failures at this stage result in abandoned carts, failed deliveries, and downstream fulfilment exceptions.

Customer Inputs

- Delivery address (street, city, postcode, country)
- Delivery method selection (standard, express, next-day, locker, PUDO)
- Payment method and billing address

OMS Validations

- **AVS:** Address Verification System normalises and validates the shipping address
- **Delivery Feasibility:** Carrier service coverage check for the destination
- **Carrier Availability:** Active service matrix queried in real time
- **Payment Risk:** Pre-authorisation fraud score applied
- **SLA Gate:** Delivery promise re-confirmed against live cut-off timers

1.3 Payment Authorisation

Payment authorisation is a multi-layered security and risk-management checkpoint. The payment gateway coordinates with the issuing bank, fraud engine, and OMS to produce a single authorisation token that gates order creation. Multiple tender types must be handled within the same flow without degrading the customer experience.

Card Payments

Visa, Mastercard, Amex — 3D Secure 2.0 challenge or frictionless flow based on risk score

Digital Wallets

PayPal, Apple Pay, Google Pay — tokenised; no raw card data transmitted

BNPL / Klarna

Klarna, Afterpay, Affirm — soft-credit check, instalment scheduling, merchant settlement

Cash on Delivery

COD flagged in OMS; carrier instructed to collect; reconciliation handled post-delivery

Key Control: The OMS stores only the authorisation token — never raw card data. Payment tokenisation is mandatory for PCI-DSS compliance.

1.4 Order Confirmation

Order confirmation is the moment the OMS formally creates the sales order record and commits all downstream systems. From this point forward, inventory is hard-reserved, the WMS queue is updated, and the customer's expectation clock starts ticking. Any failure here — duplicate orders, failed WMS push, inventory misalignment — generates immediate downstream exceptions.

Inventory Reservation

Hard reserve prevents concurrent oversell across all channels

Duplicate Prevention

Idempotency key checks block double-submission from retried payment events

WMS Push

Order record transmitted via EDI or API; pick priority and SLA lane assigned

🏭 Stage 2 — Warehouse Fulfilment (WMS)

2.1 Order Release

Order release is the WMS's internal scheduling engine. Rather than releasing orders one at a time, the WMS batches them into waves to maximise picker productivity, carrier cut-off compliance, and warehouse resource utilisation. The assignment logic must balance SLA urgency, pick zone geography, and carrier pick-up windows simultaneously.

1

OMS → WMS Sync

Orders transmitted in real time or at configurable intervals via EDI/API

2

Wave & Batch Assignment

WMS groups orders by zone, SLA priority, carrier pick-up window, and pick path efficiency

3

Picker Assignment

Pick list pushed to handheld terminal; picker, aisle zone, and tote ID all assigned

4

Cut-Off Compliance Gate

Wave release only authorised if sufficient time remains before carrier collection window

2.2 Picking

Picking is typically the most labour-intensive and error-prone step in fulfilment. Every scan at the bin level is both a confirmation of accuracy and an inventory decrement event. Scan-to-pick validation eliminates mis-picks at source, which is far cheaper than correcting them post-despatch.

Pick Path

- Picker receives optimised pick list on handheld device
- Navigates: Aisle → Rack → Shelf → Bin
- Scans item barcode at bin — WMS validates against expected SKU
- Places unit into tote or cart; tote ID linked to order wave
- Tote conveyed or manually routed to packing station

Controls

- ### Pick Accuracy

  Scan-to-pick confirms correct SKU, quantity, and location at point of pick

- ### Barcode Validation

  Mismatch triggers immediate exception; picker redirected

- ### Inventory Decrement

  WMS decrements bin stock in real time; ATP updated immediately

2.3 Quality Control (QC)

QC is a structured checkpoint that sits between picking and packing. It exists to catch picking errors, damaged units, near-expiry stock, and compliance gaps — particularly for high-value, age-restricted, or serialised items — before they are sealed into a package and handed to a carrier.

Item Verification

Correct SKU, unit condition, expiry date, batch/lot number, and serial number (where required) all confirmed against the pick list

High-Value Double-Check

Items above a defined value threshold trigger a mandatory secondary inspection by a second operator — dual-scan confirmation logged in WMS

Random QC Sampling

Statistical sampling programme applied across all pick waves; defect rate tracked as a warehouse KPI; exception trends feed continuous improvement

2.4 Packing

Packing determines physical protection, dimensional weight (DIM) cost, customer unboxing experience, and cross-border compliance. It is simultaneously a cost centre and a brand touchpoint. Packaging optimisation algorithms that right-size boxes to the item set can reduce carrier costs by 10–25%.

Packing Steps

- Select optimal packaging type: box, polybag, padded envelope, or custom branded pack
- Insert invoice, pre-printed return label, and any marketing inserts
- Seal and void-fill; weigh and measure (length × width × height)
- Apply carrier shipping label — barcode, address, service level, routing code
- Print and attach customs documentation for cross-border shipments (CN22, CN23, commercial invoice)

Controls

DIM Weight Accuracy

Automated cubing station captures precise dimensions; prevents carrier surcharges

Label Readability

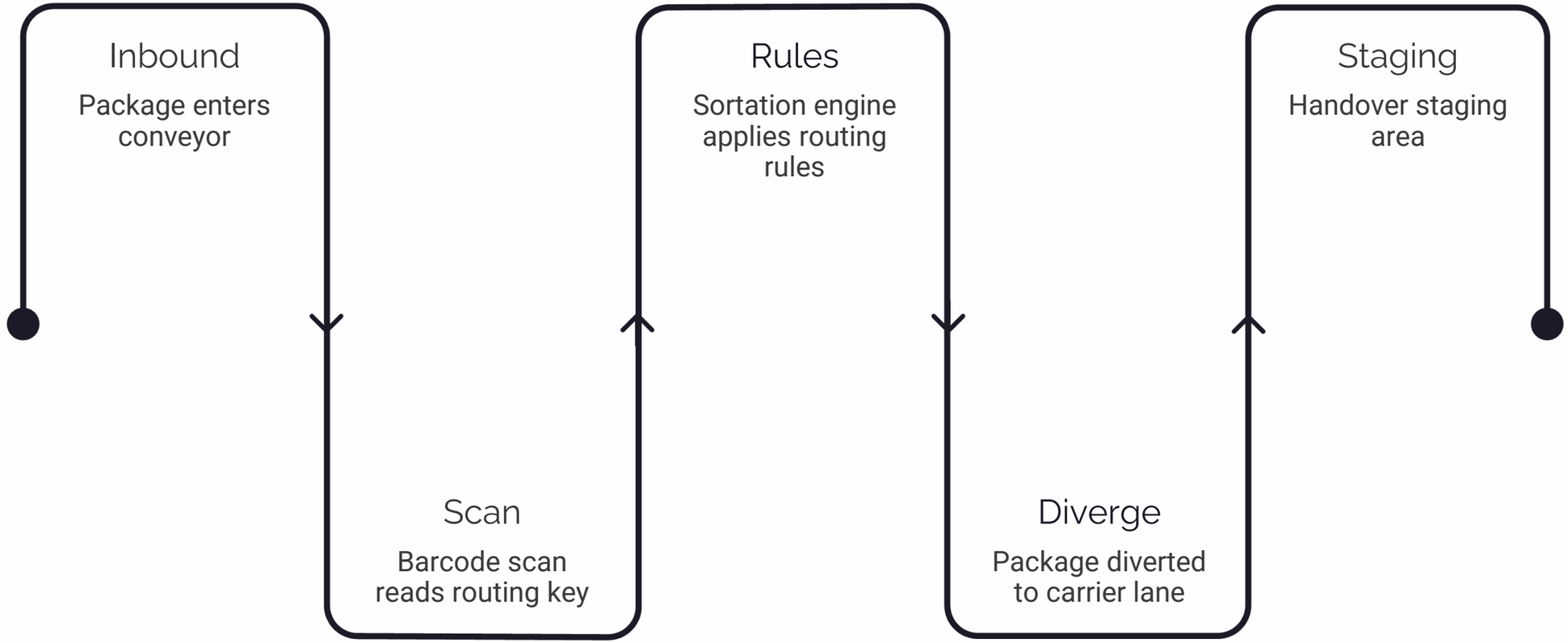
Label scanner verifies barcode grade; reprint triggered if below threshold

Packaging Optimisation

Pack algorithm selects minimum-cost compliant box from available SKU matrix

2.5 Sortation

Sortation is the automated routing layer that physically separates packages by carrier, region, service level, and delivery channel (home, locker, PUDO). In high-volume operations, automated sorters process thousands of units per hour. Mis-sorts generate carrier exceptions, delivery delays, and costly re-routing fees.



Carrier Lane

Royal Mail, DPD, FedEx, UPS, DHL — each with dedicated staging area

Region / Postcode

Destination routing separates local, national, and international streams

Service Level

Express, next-day, standard, economy — priority lanes prevent SLA blending

Locker / PUDO

Alternate delivery channel packages routed to dedicated labelling and cage staging

2.6 Handover to Carrier

Carrier handover is a legal and operational transfer of custody. The manifest exchange is the binding document that reconciles every package being tendered. Discrepancies identified at this stage are far less expensive to resolve than exceptions discovered in transit or at the delivery depot.

Handover Steps

- Carrier driver checks in at despatch gate; appointment window validated
- Cages and roll containers loaded onto carrier vehicle
- Warehouse operator scans the handover manifest — every cage barcode confirmed
- Carrier receives EDI or API manifest: parcel count, weights, service levels, special handling flags
- Cages sealed; seal numbers recorded on manifest

Controls

Handover Reconciliation

Manifest package count must match physical scan count; exceptions held

Seal Integrity

Cage seal numbers logged; tamper evidence checked at depot arrival

Departure Timestamp

Carrier departure time logged; feeds on-time despatch KPI

🚚 Stage 3 — First-Mile / Local Collection

3.1 Carrier Pickup

First-mile collection is the bridge between the warehouse and the carrier's depot network. While operationally simple, it is a critical custody-transfer event. Any delay in departure, mis-loaded cage, or failed scan at this stage propagates directly into downstream delivery SLA risk.

1 Driver Check-In

Driver presents vehicle ID and collection reference at despatch gate; appointment window and vehicle capacity confirmed

2 Cage Loading

Warehouse team loads sealed cages and roll containers onto vehicle; loading bay door sealed on completion

3 Cage Scan

Each cage barcode scanned against the collection manifest; discrepancies flagged before departure authorisation

4 Depart to Depot

Vehicle departs within collection window; GPS tracking active; ETA to local depot transmitted to carrier TMS

3.2 Local Depot Arrival

Upon arrival at the carrier's local depot, packages are inducted into the carrier's tracking and sortation system for the first time. This is the point at which carrier scan events begin appearing on the customer-facing tracking page. Scan reconciliation at this stage is the primary tool for catching lost-in-transit exceptions early.

Cage Unload

Cages unloaded from vehicle at inbound dock; seal integrity verified before break-bulk

Package Induction Scan

Every parcel scanned into the depot system; tracking event "Arrived at depot" generated and pushed to OMS/tracking API

Sort by Destination

Packages sorted by destination region, linehaul route assignment, and service level (express vs. standard)

Damage Check & Reconciliation

Physical count reconciled against manifest; damaged items photographed and exception report raised; scan reconciliation rate tracked as depot KPI

🚛 Stage 4 — Linehaul Transport

4.1 Linehaul Planning

Linehaul planning is the carrier's network-level routing and capacity optimisation problem. For express services, it may involve air or rail injection to meet overnight SLAs. For economy services, road-only multi-hub routing is planned to maximise load factor and minimise cost per unit. Vehicle, driver, and departure time assignments must be locked several hours before cut-off.

Planning Inputs

- Volume forecast by destination region and service level
- Hub connection schedules and transfer windows
- Air or rail injection windows for express services
- Vehicle capacity and driver availability

Outputs & Controls

- **Vehicle Assignment:** Truck type matched to load volume and DG requirements
- **Driver Assignment:** Hours-of-service compliance verified before assignment
- **Departure Schedule:** Locked against hub arrival windows
- **Capacity Planning KPI:** Load factor target typically 85–95%
- **SLA Compliance Gate:** Route plan reviewed against delivery date commitments

4.2 Linehaul Execution

During linehaul execution, packages are in the highest-velocity, lowest-touch part of the journey. Visibility is maintained entirely through GPS telemetry and geofence events. For temperature-sensitive or high-value cargo, additional sensor monitoring is required throughout the transit leg.

1

Load & Depart

Packages loaded onto linehaul vehicle at origin depot; departure timestamp logged; load sealed

2

In-Transit GPS Tracking

Real-time vehicle position transmitted to carrier TMS; ETA to destination hub calculated continuously

3

Temperature Monitoring

For pharma, perishables, or beauty goods — temperature logger active; alerts if excursion detected

4

Geofencing & Compliance

Geofence events trigger automated notifications; driver hours monitored against Working Time Directive limits; high-value routes use secure, pre-approved stopping points only

4.3 Hub Arrival

Hub arrival is the network's central sortation event. Regional hubs operate around the clock and process hundreds of thousands of parcels per day using automated conveyor and scan-and-sort technology. The accuracy of sortation here determines whether packages reach the correct delivery depot — and therefore whether the delivery SLA is met.

1

Unload & Induct

Packages unloaded from linehaul vehicles; scanned onto hub conveyor system; "Hub arrival" tracking event generated

2

Automated Sortation

High-speed scanners read barcodes; packages diverted to outbound lanes by delivery depot, postal sector, and service level

3

Exception Handling

Unreadable barcodes, oversized items, and damage reports diverted to manual exception desk; re-labelled or returned to origin

4

Outbound Loading

Sorted packages loaded into cages destined for delivery depots; onward manifest generated; damage reporting completed

🚚 Stage 5 — Last-Mile Delivery

5.1 Depot Arrival

The delivery depot is the final staging point before packages reach the customer. Route optimisation at this stage directly determines cost per delivery, driver productivity, and SLA achievement rate. Every package must be assigned to a driver's manifested route before vehicles depart.

Inbound Steps

- Packages arrive at delivery depot from regional hub; induction scan generates "At delivery depot" tracking event
- Packages sorted into delivery rounds by postcode sector and route assignment
- Individual driver manifests generated; SLA priority flagged (next-day vs. standard)

Controls

- **Route Optimisation**

  Dynamic routing engine minimises drive time, fuel cost, and delivery sequence — recalculated nightly

- **SLA Monitoring**

  Packages approaching SLA breach flagged for priority load; escalation triggers automated alert to operations team

- **Capacity Planning**

  Van load capacity matched to route volume; overflow re-allocated to additional resource

5.2 Out for Delivery

The "out for delivery" phase is the most visible part of the fulfilment journey for the customer. Proactive notifications — combined with live tracking — are proven to reduce inbound "Where Is My Order" (WISMO) contacts by 30–50%. Driver behaviour and route compliance during this phase directly determines first-attempt success rates.

Van Loading & Scan

Driver loads van in reverse delivery sequence; every parcel scanned to confirm against manifest; discrepancies resolved before departure

Customer Notifications

"Out for delivery" push notification and SMS sent to customer; live tracking link activated — real-time GPS position of driver visible

Route Execution

Driver navigates optimised route sequence; GPS tracking continuously monitored by depot operations; delivery sequence can be dynamically adjusted for traffic

5.3 Delivery Attempt

A successful first-attempt delivery is the single most important cost and satisfaction metric in last-mile logistics. Every failed attempt costs the carrier £3–8 in re-delivery expense and damages customer experience. Proof-of-delivery (POD) capture — photo, signature, GPS stamp — protects both the retailer and carrier against fraudulent "not received" claims.

Delivery Channel Options

- **Home delivery:** Doorstep or designated safe place
- **Parcel locker:** Automated locker — unique PIN or QR code issued to customer
- **PUDO point:** Newsagent, convenience store, or post office acting as pick-up location
- **Office / concierge:** Signature-required business or residential concierge delivery

POD Capture & Controls

→ Signature Capture

Electronic signature on handheld for high-value or age-restricted items

→ Photographic POD

Timestamped photo at delivery location; stored and accessible to merchant and customer

→ GPS Stamp

Delivery geocoordinate logged; validated against expected address polygon

→ Temperature Check

Cold-chain items — temperature logged at point of delivery handover

5.4 Failed Delivery

Failed delivery attempts are a significant source of cost and customer dissatisfaction. The OMS and carrier system must respond within minutes — notifying the customer, offering re-delivery or redirect options, and preventing the package from languishing unactioned at the depot. Proactive management of failed deliveries is one of the most impactful levers for reducing carrier cost and improving NPS.

Common Failure Reasons

- Customer not home at time of attempt
- Address incomplete or incorrect
- Access denied (secure building, gated community)
- Weather or road access
- Package too large for safe place or locker

Resolution Options

- **Reattempt:** Scheduled for next working day; customer notified with new window
- **PUDO Redirect:** Customer self-selects local collection point via tracking link
- **Address Correction:** Customer updates address; carrier re-routes
- **Return to Depot:** After maximum attempts (typically 3); customer notified

Controls

- Automated customer notification within 30 minutes of failed attempt
- SLA impact assessment: carries re-routed or prioritised before cut-off
- Failed attempt rate tracked as carrier performance KPI

📬 Stage 6 — Customer Experience & Notifications

6.1 Tracking Updates

Continuous, accurate tracking is no longer a differentiator — it is a baseline customer expectation. The OMS aggregates carrier scan events via API or EDI and translates carrier-specific status codes into a unified, customer-friendly event timeline. Delays or gaps in tracking visibility are the primary driver of WISMO contacts, which represent 35–50% of all e-commerce customer service volume.

Order Confirmed

OMS order record created; confirmation email / SMS sent immediately

Shipped

Carrier scan at depot induction; tracking number activated; "Shipped" notification sent

In Transit

Linehaul and hub scan events surfaced; estimated delivery date refreshed dynamically

Out for Delivery

Depot departure scan triggers live tracking link; delivery window communicated

Delivered / Exception

POD event closes order; exception triggers automated resolution workflow

API Synchronisation: Carrier tracking APIs must be polled at minimum every 15 minutes for standard, and every 5 minutes for express services, to maintain event accuracy.

6.2 Customer Support

Customer support is the safety net for every exception that automated tracking cannot self-resolve. Agents must have single-pane-of-glass access to the OMS, WMS, and carrier tracking systems simultaneously to diagnose and resolve issues without transferring the customer between departments. Mean time to resolution (MTTR) is the key efficiency metric; first-contact resolution (FCR) rate is the key quality metric.

Common Contact Reasons

- Order not yet received / tracking not updating
- Incorrect item received
- Damaged item on arrival
- Delivery to wrong address or neighbour
- Failed delivery — rebook or redirect request
- Return and refund status enquiry

Agent Toolset & Controls

- ### OMS Access

  Full order history, payment status, allocation, and fulfilment events visible in one view

- ### WMS Access

  Pick, pack, and despatch timestamps; QC exception records; packing images (if available)

- ### Carrier Tracking

  Live carrier scan event timeline; ability to raise carrier investigation or re-delivery request directly

- ### Escalation Rules

  Automated escalation if no resolution within SLA window; senior agent and carrier account manager notified

Stage 7 — Returns & Reverse Logistics

7.1 Return Initiation

Returns are both a cost centre and a trust signal. A frictionless, self-service returns initiation process — where the customer can generate a return label in under 60 seconds — directly increases repeat purchase likelihood. Simultaneously, every return request must be validated against policy rules and fraud signals before a label is issued.

Customer Submits Return Request

Via self-service portal, app, or support agent; reason code captured (wrong item, changed mind, defective, etc.)

OMS Policy Validation

Return window checked (e.g. 30 days); condition rules applied; reason code screened against fraud signals

Return Label Generation

Pre-paid return label (or QR code for labelless drop-off) generated and emailed or displayed in portal; drop-off point instructions included

RMA Created in OMS

Return Merchandise Authorisation (RMA) record created; linked to original order; WMS pre-notified of expected return

7.2 Return Transport

Return transport mirrors the outbound journey in reverse, but typically operates at lower velocity and with less visibility. Scan events during return transit are fewer and less consistent than outbound. Proactive return tracking — surfaced to both the customer and the operations team — reduces uncertainty and pre-empts refund escalations.

Drop-Off Channels

- **Parcel locker:** Customer deposits item; locker generates scan event immediately
- **PUDO point:** Post office, newsagent, or convenience store; counter scan at drop-off
- **Post office:** Over-the-counter acceptance; receipt issued to customer
- **Home courier pickup:** Driver collects from customer's address on booked timeslot

Controls

→ Scan Events

Drop-off scan triggers "Return accepted" notification to customer and OMS; visibility maintained throughout return journey

→ Return Tracking

Return tracking number activated on drop-off scan; status updates surfaced on the same tracking portal as outbound

→ SLA for Returns

Carrier-to-warehouse transit time tracked; breach triggers proactive customer communication

7.3 Return Processing

Return processing is the moment of truth for both inventory recovery and fraud prevention. Every returned item must be physically inspected and graded before a disposition decision is made. The quality of return processing directly determines the percentage of returned stock that can be restocked at full value — a major lever for reverse logistics profitability.

Inspection & Grading

WMS receives return against RMA; item inspected for condition (new/sealed, open-box, damaged), packaging integrity, and functionality (electronics tested); grading logged in WMS against reason code

Restock

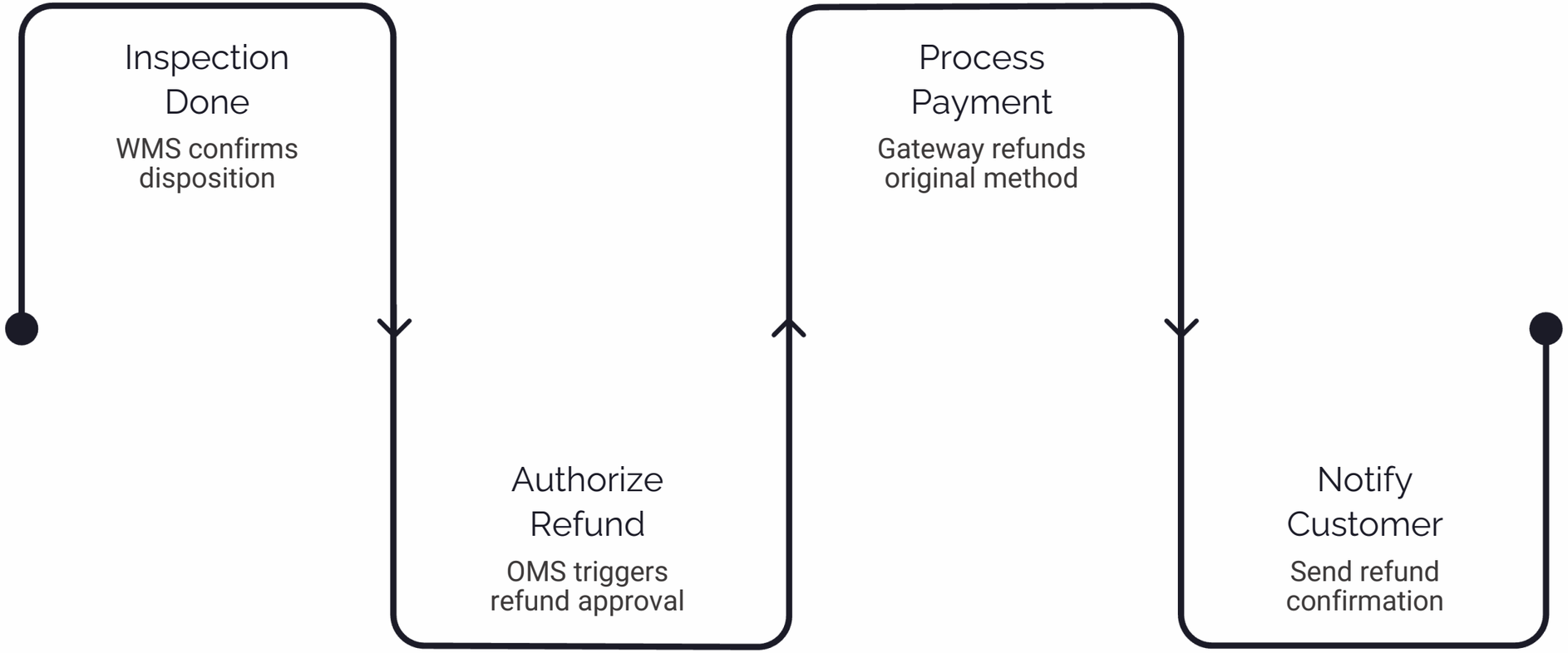
Grade A (new/unopened) items immediately restocked to sellable bin location; ATP updated; original or new bin assigned based on slotting rules

Refurbish / Recycle / Destroy

Grade B/C items routed to refurbishment, secondary market sale, certified recycling, or destruction (for DG/expired goods) — each disposition code tracked in WMS for cost accounting

7.4 Refund

Refund processing is the financial close of the returns cycle. Speed and accuracy here are critical to customer trust: a refund processed within 24 hours of return receipt generates significantly higher customer satisfaction scores than one processed within 5 days. Refund accuracy — ensuring the correct amount is returned to the correct payment method — is equally important to prevent financial loss and chargeback risk.



Refund Accuracy

OMS validates refund amount against original order value; partial refunds for condition-graded returns calculated automatically

Payment Method Match

Refund routed to original tender type (card, PayPal, BNPL); credit notes issued where original method is expired

Fraud Prevention

High-frequency returners and anomalous return patterns flagged; manual review triggered before refund release

📊 Stage 8 — Post-Shipment Activities

8.1 Billing & Cost Reconciliation

Post-shipment billing is a significant and frequently underestimated cost leakage point. Carrier invoices contain dozens of surcharge line items — many of which are applied in error or above contracted rates. Automated invoice auditing that compares every charge against the contracted rate card and the actual shipment attributes (DIM weight, zone, service level) is essential to controlling carrier spend.

Carrier Base Charges

Per-parcel rate validated against contracted weight band, destination zone, and service level — each shipment reconciled individually

Fuel & Zone Surcharges

Fuel index surcharges validated against published weekly rate; remote area zone surcharges checked against carrier postcode matrix

Returns Processing Fees

Per-return handling fees validated against return volume and contracted rate; mis-graded items disputed with carrier evidence

Packaging & Materials

Internal packaging consumption tracked by WMS; unit cost × volume used for COGS allocation and packaging optimisation ROI calculation

8.2 KPI Reporting

KPI reporting converts operational data into the management signals that drive continuous improvement. A well-designed KPI framework balances customer experience metrics (OTD, CSAT), operational efficiency metrics (first-attempt success, cost per shipment), and sustainability metrics (CO_2 per order). Reporting cadence should match decision-making cycles: daily for operational metrics, weekly for trend analysis, monthly for strategic review.

OTD

On-Time Delivery

% of orders delivered within the promised window; primary SLA metric and carrier performance indicator

FAS

First-Attempt Success

% of delivery attempts resulting in successful delivery on first visit; direct driver of last-mile unit economics

DMG

Damage Rate

% of shipments arriving damaged; segmented by carrier, route, and packaging type to isolate root cause

RTN

Return Rate

% of orders returned; tracked by category, carrier, and return reason — informs product and fulfilment improvement

CPS

Cost per Shipment

Total fulfilment cost (warehouse + carrier + packaging) per shipped order; the core unit economics metric

CO_2

CO_2 per Order

Carbon emissions per shipped order; tracked against net-zero targets and reported in sustainability disclosures

8.3 Claims Handling

Claims handling is the formal process for recovering costs from carriers when service failures result in financial loss. Timely, evidence-based claims submission — with standardised documentation — is the key to maximising recovery rates. Carriers typically have strict filing windows (14–90 days depending on claim type and contract), and claims submitted late are routinely rejected regardless of merit.

Lost Package Claims

Carrier investigation opened after breach of "last scan + X days" threshold; commercial invoice, POD absence, and carrier scan history submitted as evidence; settlement at declared or insured value

Damaged Package Claims

Photographic evidence of damage, original packing standard, and item value required; carrier liability limited by weight-based formula unless enhanced insurance declared at booking

Late Delivery Claims

Service guarantee refund claimed for express services where carrier missed the contracted delivery window; carrier-specific filing process and evidence requirements apply

Fraudulent Claim Prevention

Machine-learning fraud models flag anomalous claim patterns (e.g. high-value items, repeat addresses, new accounts); manual review gate applied before settlement; carrier notified of confirmed fraud

8.4 Data Archiving & Compliance

Data archiving is the final step in the shipment lifecycle — and one of the most overlooked. Order, tracking, POD, and return records must be retained in accessible, queryable form to support carrier dispute resolution, customs audits, tax investigations, GDPR data subject access requests, and internal performance analytics. Retention periods vary by jurisdiction and record type, ranging from 2 years for POD records to 7+ years for VAT and customs documentation.

Order Data

Full order record including customer details, line items, pricing, payment tokens, and fulfilment timestamps — retained per data protection and tax law requirements

Tracking Events

Complete carrier scan event log for every shipment; queryable for claims, disputes, and carrier SLA audit — minimum 24-month retention recommended

Proof of Delivery (POD)

Signature images, delivery photos, GPS coordinates, and timestamps archived and accessible to support and operations teams; critical for fraud dispute resolution

Return Records

RMA records, inspection grading, disposition codes, and refund references archived; cross-referenced with original order and inventory reintegration events for audit trail integrity

Compliance Note: Customs and VAT records for cross-border shipments must be retained for a minimum of 7 years in most jurisdictions. Ensure archival systems support structured export for regulatory requests.