JAHNVI RAICHURA · PRODUCT 02 · CONSUMER GOODS (FMCG)

PRD + DECISION RULES

RestockIQ

Product Requirements Document

Stock-out early warning for a consumer goods brand
Version 1.0 · Status: Approved for pilot

Owner: Jahnvi Raichura · jahnviraichura.com
Portfolio case study. All figures are illustrative sample data; no employer information is used.

1. Summary

RestockIQ predicts which products will run out in which stores **before the shelf goes empty**, ranks every gap by sales at risk, and recommends the cheapest fix: **transfer from a nearby store, expedite the delivery, or reorder**. It also flags overstock so the fix for one store can come from another.

96%+ On-shelf availability target (from 91.8%)	**5+ days** Warning before a stock-out	**$1M+** Lost sales recovered per season	**Flat** Excess stock (no overstock trade-off)

2. Problem

- On-shelf availability was **91.8%**, below the 95% our retail partners expect.
- Empty shelves cost about **4.1% of revenue** each season.
- Stock-outs were found in last week's sales report, so there was **no warning** at all. By then the shopper had bought a competitor's product.

Baseline from a one-season audit across 3 retail partners.

3. Users and jobs to be done

User	Role	Job to be done	Key pain today
Supply planner	Primary user	Prevent stock-outs with the least cost and effort	400 product–store combinations and no way to know which 10 matter today
Account manager	Partner-facing	Protect the retailer relationship and shelf space	The retailer calls before we know we are out
Director, Supply Chain	Decision-maker	Hit availability targets without overstocking	No view of availability or its cost

4. Goals and non-goals

Goals

- Raise on-shelf availability from 91.8% to 96% or more.
- Warn planners at least 5 days before a stock-out.
- Recover $1M+ of lost sales per season.
- Keep excess stock flat.

Out of scope for v1

- Automatic purchase orders.

- A retailer-facing portal.
- Weather or seasonal forecasting.

5. User stories

ID	User story	Priority
US-01	As a supply planner, I want a daily list of products about to run out, ranked by sales at risk, so I fix the costliest first.	Must
US-02	As a supply planner, I want to see if a nearby store has spare stock so I can transfer before paying to expedite.	Must
US-03	As an account manager, I want availability by retailer so I can update partners before they call me.	Must
US-04	As a supply planner, I want upcoming promotions included so the forecast reflects the sales lift.	Must
US-05	As a director, I want overstock flagged so cash isn't tied up in slow stock.	Should
US-06	As a store manager, I want a one-click transfer request.	Later (v1.1)

6. Functional requirements

#	Requirement	Acceptance criteria
FR-1	Daily import of retailer sales and stock by product and store	Data no older than 24 hours; missing stores flagged
FR-2	Days of cover, adjusted for promotions	Matches the rules in section 7 for every product–store pair
FR-3	Stock-out day and sales at risk	Units short × price, for the days before the next delivery
FR-4	Recommended fix	Follows the decision order in section 7; names the source store for transfers
FR-5	Planner dashboard	Filters by retailer, region, category and status; heatmap of days of cover
FR-6	Daily action list	Ranked by sales at risk; exportable to Excel

7. Decision rules

Inputs per product and store

Input	Source	Notes
Units in store	Retailer stock feed	End of previous day
Average daily sales	Retailer sales feed	Last 28 days
Next delivery	Shipping schedule	Days from today
Promotion	Trade calendar	+40% daily sales from the promotion start
Spare units nearby	Same-region stores	Stock above (delivery days + 7) × daily sales

Calculations

1. **Days of cover** = units in store ÷ average daily sales (adjusted for promotions).
2. **Stock-out day** = the first day projected stock falls below zero before the next delivery.
3. **Sales at risk** = units short before the delivery × retail price.

Status and action

Condition	Status	Recommended action
Runs out before delivery, and nearby spare ≥ 80% of the gap	Critical	Transfer from the nearby store (cheapest, in store next day)
Runs out before delivery; gap of 2+ days	Critical	Expedite the delivery to the day before the stock-out
Runs out before delivery; short gap	Critical	Reorder now and ship priority
Lasts to delivery, but under 7 days of cover or under 3 days of buffer	At risk	Add a buffer to the next order
30+ days of cover	Overstock	Pause the next order; offer spare units to stores that are short
Everything else	Healthy	No action

Why transfer first: ordering more stock everywhere hides the problem and ties up cash. Moving spare units from an overstocked store fixes the gap the next day with no new inventory.

8. Success metrics

Metric	Baseline	Target	How measured
On-shelf availability	91.8%	96%+	Product–store days in stock ÷ all product–store days
Stock-outs per week	Baseline count	−40% or better	Pilot stores vs. matched control stores
Lost sales recovered	n/a	$1M+ per season	Lost sales avoided vs. control-store rate
Warning time	0 days	5+ days	Days between first alert and projected stock-out
Excess stock	Baseline	Flat	Units above 30 days of cover

9. Risks

Risk	Mitigation
Retailer feed is late or incomplete	Freshness check on every import; stale stores flagged on the dashboard
Transfers rejected by store teams	Agree transfer rules with retailer operations before pilot
Planners ignore a long list	Rank by sales at risk; show the top 10 first