Business Rules & Decision Tables (IIBA / BABOK-style)

Project: Retail Operations Backoffice (Hệ thống quản lý bán hàng) — Multi-branch (nhiều chi nhánh)

Source docs: UC Descriptions (DOCX, Vietnamese — "VI source") + module diagrams (UC / Sequence / Activity)

Version: 0.2 (English-first, locked policies)

Owner: Business Analyst

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1) Purpose

Provide a recruiter-friendly, BABOK-aligned Business Rules pack for a multi-branch retail backoffice system:

- Rule catalog (what rules exist and why)
- Decision tables (clear, testable logic)
- Governance & approval (who can change which rules)

2) Scope

2.1 Modules covered (traceable to VI source UC DOCX)

- Sales — Bán hàng
- Promotions — Quản lý khuyến mại
- Product catalog — Quản lý hàng hóa
- Receiving — Nhập hàng
- Stocktake — Kiểm kho
- Inter-branch transfer — Chuyển hàng
- Receive transfer — Nhận hàng từ chi nhánh khác
- Write-off — Xuất hủy
- Cashbook — Sổ quỹ
- Reporting — Thống kê tổng quan

2.2 Out of scope (for this document)

- UI design details (handled by screen flows / diagrams)
- Technical architecture and integrations

3) Rule categories

- Inventory integrity (negative stock, adjustments, write-off)
- Promotion eligibility and conflicts
- Approval & override controls (thresholds)
- Inter-branch transfer integrity (dispatch/receipt, discrepancies)
- Cashbook controls (end-of-day reconciliation)

4) Business Rule Catalog

Format: Rule ID, statement, rationale, impacted modules, owner/approval.

4.0 Locked policy decisions (baseline)

To make this portfolio "production-ready", the following baseline policies are locked for consistency across Rules → RTM → UAT:

- **Negative stock:** Block by default. Allow override only by **Branch manager (BM)**, only for **Sales** and **Transfer Dispatch**, and always with reason + audit log.
- **Promotion conflict resolution:** Use an explicit **priority** field. Tie-break order: (1) highest discount value, (2) earliest created.
- **Transfer discrepancy tolerance:** Per SKU tolerance = **max(2 units, 0.5% of dispatched qty rounded up)**. Discrepancies above tolerance require BM approval and a discrepancy record.
- **Evidence/attachments:** Required for high-risk inventory actions above thresholds (see BR-INV-005).

4.1 Inventory integrity

BR-INV-001 — Branch-level stock is the single source of truth

- Statement: All inventory movements must be recorded against a **Branch (chi nhánh)** and a product SKU.

- Rationale: Supports auditability and multi-branch reporting.
- Modules: Stocktake (Kiểm kho), Receiving (Nhập hàng), Transfer (Chuyển hàng), Write-off (Xuất hủy), Sales (Bán hàng)
- Owner/Approval: OPS + ADM (policy), BM (operational enforcement)

BR-INV-002 — Negative stock policy

- Statement: The system shall **block** transactions that would result in negative stock.
- Exception: **BM override** is allowed for Sales and Transfer Dispatch only, with a mandatory reason and audit trail.
- Modules: Sales, Transfer dispatch
- Owner/Approval: OPS (policy), ADM (implementation), BM (override usage)

BR-INV-003 — Stock adjustments require reason codes

- Statement: Any adjustment after Stocktake must have a reason code and reference stocktake session.
- Modules: Stocktake
- Owner/Approval: OPS (reason codes), BM (approval), ADM (permissions)

BR-INV-004 — Write-off requires mandatory evidence fields

- Statement: Write-off (Xuất hủy) requires: reason code + notes, and optional attachment reference (if used).
- Modules: Write-off
- Owner/Approval: BM + OPS

BR-INV-005 — Evidence thresholds for inventory risk controls

- Statement: Evidence/attachment becomes mandatory when inventory actions exceed thresholds.
- Default thresholds (configurable):
- Write-off: qty $\geq$ 5 units **or** estimated value $\geq$ 1,000,000 VND
- Stock adjustment after stocktake: abs(qty delta) $\geq$ 10 units **or** estimated value $\geq$ 2,000,000 VND
- Modules: Stocktake, Write-off
- Owner/Approval: OPS (threshold policy), ADM (config), BM (enforcement)

4.2 Promotions

BR-PROMO-001 — Promotion eligibility

- Statement: A promotion applies only if all eligibility criteria are satisfied (date range, branch scope, product scope, customer type if any).
- Modules: Promotions, Sales
- Owner/Approval: OPS

BR-PROMO-002 — Promotion conflict resolution

- Statement: When multiple promotions match, system must apply a deterministic conflict rule.
- Locked baseline: priority (manual) > highest discount amount > earliest created.
- Modules: Promotions, Sales
- Owner/Approval: OPS (policy), ADM (implementation)

BR-PROMO-003 — Promotion change control

- Statement: Creating/updating promotions requires approval (at least BM or OPS depending on scope).
- Modules: Promotions
- Owner/Approval: OPS + BM

4.3 Transfer integrity

BR-TRF-001 — Transfer is a two-step lifecycle

- Statement: Inter-branch transfer includes at minimum: Create/Dispatch (source) and Receive/Confirm (destination).
- Modules: Transfer, Receive transfer
- Owner/Approval: OPS

BR-TRF-002 — Discrepancy handling

- Statement: If received quantity differs from dispatched quantity, the system must capture discrepancy reason and approval.
- Modules: Transfer, Receive transfer
- Owner/Approval: BM + OPS

BR-TRF-003 — Discrepancy tolerance (locked baseline)

- Statement: Per SKU tolerance = max(2 units, 0.5% of dispatched qty rounded up). Above tolerance requires BM approval.
- Modules: Transfer, Receive transfer
- Owner/Approval: OPS (policy), BM (approval)

4.4 Cashbook controls

BR-CASH-001 — Cashbook entries are traceable to sales and adjustments

- Statement: Cashbook entries must reconcile with sales receipts, refunds, and approved cash adjustments.
- Modules: Cashbook, Sales
- Owner/Approval: BM

BR-CASH-002 — End-of-day close requires reconciliation

- Statement: Daily close requires reconciliation outcome: Balanced / Short / Over with reason.
- Modules: Cashbook, Reporting
- Owner/Approval: BM

5) Decision Tables

Decision tables below translate key policies into testable logic.

5.1 DT-INV-NEG-001 — Negative stock handling

Trigger: A transaction reduces available stock below 0.

Inputs:

- Transaction type = Sale / Transfer Dispatch / Write-off
- Product allows negative stock? (Yes/No)
- User role = Cashier / Inventory / Warehouse / Branch manager
- Override permitted? (Yes/No)

Outputs:

- Allow transaction? (Yes/No)

- Require override? (Yes/No)
- Log event for audit? (Yes/No)

Condition / Rule	R1	R2	R3	R4
Transaction type is Sales or Transfer Dispatch	Yes	Yes	Yes	Yes
Negative stock would occur	Yes	Yes	Yes	Yes
User role is Branch manager (BM)	No	Yes	No	Yes
Override permitted (policy)	N/A	Yes	N/A	Yes
Allow transaction	No	Yes	No	Yes
Require override	N/A	Yes	N/A	Yes
Audit log	Yes	Yes	Yes	Yes

Notes:

- Locked baseline: Negative stock is blocked unless BM override is used.
- R4 represents a branch manager using override; R1/R3 represent non-BM attempts.

5.2 DT-PROMO-001 — Promotion selection (conflict resolution)

Trigger: Multiple promotions match the basket.

Inputs:

- Promotions matched count (0/1/Many)
- Has priority field? (Yes/No)
- Discount type = % / fixed amount / buy X get Y

Outputs:

- Selected promotion

- Explanation text for receipt/audit

Condition / Rule	R1	R2	R3
Promotions matched	0	1	Many
Has priority field	N/A	N/A	Yes
Selected promotion	None	The one matched	Highest priority (tie-break by max discount)
Explain selection	N/A	"Single match"	"Priority + tie-break"

5.3 DT-TRF-001 — Transfer discrepancy handling

Trigger: Destination confirms receipt.

Inputs:

- Received qty equals dispatched qty? (Yes/No)
- Discrepancy within tolerance? (Yes/No)
- Approval provided? (Yes/No)

Outputs:

- Close transfer? (Yes/No)
- Create discrepancy record? (Yes/No)

Condition / Rule	R1	R2	R3	R4
Qty matches	Yes	No	No	No
Within tolerance	N/A	Yes	Yes	No
Approval provided	N/A	No	Yes	Yes
Close transfer	Yes	No	Yes	Yes
Discrepancy record	No	Yes	Yes	Yes

Notes:

- "Within tolerance" uses BR-TRF-003 baseline: max(2 units, 0.5% of dispatched qty rounded up).

5.4 DT-CASH-001 — End-of-day cash reconciliation

Inputs:

- Expected cash (from system)
- Counted cash (physical)
- Difference = counted - expected

Outputs:

- Status = Balanced / Short / Over
- Require manager note? (Yes/No)

Condition / Rule	R1	R2	R3
Difference	0	< 0	> 0
Status	Balanced	Short	Over
Require manager note	No	Yes	Yes

6) Governance (rule ownership & change control)

- OPS owns: policy-level rules (promotion conflicts, negative stock baseline, reason codes).
- ADM owns: permission model and enforcement implementation.
- BM owns: branch-level approvals and exception handling.

Change control recommendation:

- Any rule change impacting cash or inventory integrity requires OPS + ADM approval.
- Any threshold/override change requires BM concurrence (operational impact).

7) Open Questions (next iteration)

These are not required to keep the baseline consistent, but can further strengthen realism:

1. Should BM override require dual control (BM + OPS) for some cases?
2. Should tolerance vary by product category (fragile/high-value vs standard)?
3. Should write-off thresholds be quantity-based only, value-based only, or both?

8) Glossary / Terminology mapping

Vietnamese (VI source)	English (used in this doc)
Chi nhánh	Branch
Bán hàng	Sales
Chuyển hàng	Inter-branch transfer
Kiểm kho	Stocktake
Nhập hàng	Receiving
Nhận hàng từ chi nhánh khác	Receive transfer
Trả hàng nhập	Return to supplier
Xuất hủy	Write-off
Sổ quỹ	Cashbook
Quản lý hàng hóa	Product catalog
Quản lý khuyến mại	Promotions
Thống kê tổng quan	Reporting

Abbreviations:

- BR = Business Rule
- DT = Decision Table
- OPS = HQ operations
- ADM = System admin
- BM = Branch manager