2025

Business Case

Project Title: **INVENTORY OPERATIONS ENHANCEMENT INITIATIVE**

Prepared By : NITIN KUNIGAL (Business Analyst)

Date : Dec 2025

MapleDash Grocers Inc.

Table of Contents

Document Control

Item	Details
Document Title	Business Requirements Document
Project Name	MapleDash Inventory Operations Enhancement Initiative
Organization	MapleDash Grocers (Simulated)
Prepared By	Nitin Kunigal (Business Analyst)
Project Sponsor	COO
Version	2.0
Last Updated	12/08/2025
Creation Date	12/05/2025

Executive Summary

MapleDash Grocers operates a multi-warehouse e-grocery network across the Greater Toronto Area, supporting rapid order fulfillment in a highly volatile demand environment. While the organization has implemented core operational systems such as an Inventory Management System (IMS), Warehouse Management System (WMS), and Order Management System (OMS), inventory operations remain constrained by delayed system updates, inconsistent execution discipline, and heavy reliance on manual supervision. These limitations have resulted in measurable inventory accuracy gaps, Available-to-Promise (ATP) overselling, uneven SKU-level stock coverage, and increased operational friction.

A data-driven current-state assessment, supported by Power BI analysis and operational process reviews, confirms that these challenges are not driven by insufficient inventory or lack of systems. Instead, they stem from gaps between physical inventory movements and system-recorded updates, inconsistent application of replenishment and counting rules, and reactive exception handling. While aggregate metrics such as total inventory value appears stable, deeper SKU-level indicators reveal elevated overselling risk, excessive days of cover for some items, and persistent stockouts for others.

This business case proposes a targeted Inventory Operations Enhancement initiative focused on strengthening MapleDash's existing IMS capabilities rather than replacing systems or introducing enterprise-scale integrations. The recommended approach introduces semi-automated, system-directed workflows across five critical processes: Inbound Receiving, Putaway, Cycle Counting, Replenishment, and Order Picking. Automation is applied selectively to routine, repeatable activities, while human review is reserved for material exceptions based on clearly defined thresholds.

Key elements of the proposed solution include system-directed task generation, real-time validation at execution points, automated inventory updates following approved actions, and standardized exception workflows. Lightweight, scheduled integrations between IMS and upstream systems ensure timely data synchronization without adding architectural complexity or cost.

The expected business benefits include improved inventory accuracy, reduced ATP overselling, more balanced SKU-level stock coverage, lower supervisor dependency, and greater confidence in fulfillment commitments. These outcomes directly support MapleDash's strategic objectives of operational scalability, disciplined cost control, and improved customer experience.

The required investment is moderate and concentrated on system configuration, process enablement, training, and limited integration enhancements. The cost of

inaction includes continued overselling risk, rising supervisor workload, inefficient use of inventory capital, and increasing operational fragility as order volumes scale.

Based on quantified performance gaps, validated root causes, and a clearly defined future state aligned to existing KPIs, this business case recommends proceeding with the Inventory Operations Enhancement initiative. Approval will enable MapleDash to close critical execution gaps, stabilize inventory performance, and build a scalable foundation for future growth without overextending technology or organizational capacity.

1. Problem Statement & Strategic Context

1.1 Business Context

MapleDash Grocers operates a multi-warehouse e-grocery fulfillment network serving customers across the Greater Toronto Area. The business model depends on accurate inventory availability, predictable fulfillment lead times, and reliable promise dates in a demand environment shaped by promotions, seasonality, and SKU-level volatility.

Although MapleDash has implemented foundational operational systems including IMS, WMS, and OMS, these systems are not consistently leveraged to enforce disciplined, system-driven inventory execution. As order volumes and SKU complexity have grown, operational practices have remained largely reactive, with warehouse teams and supervisors compensating for system gaps through manual coordination.

This growing mismatch between operational scale and execution discipline has increased strain across warehouse operations, inventory planning, and fulfillment reliability.

1.2 Core Business Problem

The core business problem is not a lack of inventory, data, or technology, but a lack of alignment between physical inventory movements and system-recorded inventory states.

Specifically:

- Inventory updates are often delayed or inconsistent following receiving, putaway, replenishment, and cycle counting activities.
- ATP is recalculated late, increasing the risk of overselling despite adequate total inventory levels.
- Exception handling is heavily supervisor-driven, even for low-risk or routine variances.
- Replenishment and cycle counting rules are applied inconsistently across warehouses and SKUs.
- Picking operations experience avoidable shortages due to upstream execution and timing gaps.

These issues result in hidden stockouts, inflated safety buffers, inefficient use of inventory capital, and reduced confidence in inventory-driven decision-making.

1.3 Evidence from Current-State Analysis

Power BI-based analysis of operational data provides clear evidence of these challenges:

- Median sellable coverage materially exceeds overall days of cover, indicating uneven SKU-level stock distribution.
- A meaningful percentage of SKUs fall below reorder point and safety stock thresholds despite healthy total inventory value.
- ATP overselling occurs even when aggregate inventory levels appear sufficient.
- Supervisor intervention rates remain high for routine inventory adjustments that could be system-managed.
- Supplier lead time variability exacerbates execution challenges but is not currently absorbed by disciplined inbound controls.

These findings confirm that current performance limitations are driven by execution gaps and process inconsistency rather than demand uncertainty alone.

1.4 Strategic Importance

If left unaddressed, these issues will intensify as MapleDash continues to scale:

- Manual controls and tribal knowledge do not scale with order volume.
- Supervisor capacity becomes a structural bottleneck.
- Inventory inaccuracies erode fulfillment reliability and customer trust.
- Inventory capital becomes less efficient as buffers increase to offset execution risk.

Addressing these gaps directly supports MapleDash's strategic priorities:

- Improve fulfillment reliability without increasing inventory investment.
- Enable consistent operations across multiple fulfillment centers.
- Reduce operational firefighting and reliance on individual expertise.
- Establish a single, trusted version of inventory truth across teams.

1.5 Why This Initiative Now

This initiative represents a pragmatic operational inflection point rather than a full digital transformation.

MapleDash does not require real-time enterprise integrations or advanced forecasting capabilities to resolve its core issues. Instead, it requires:

- Stronger execution discipline at inventory touchpoints.
- System-directed workflows for routine activities.
- Clearly defined exception thresholds and escalation paths.
- Lightweight integrations that improve data timeliness without overengineering.

The proposed Inventory Operations Enhancement initiative is intentionally scoped to deliver measurable KPI improvements while remaining aligned with MapleDash's size, data maturity, and near-term growth trajectory.

2. Business Objectives

The primary objective of the MapleDash Inventory Management System (IMS) enhancement initiative is to improve inventory accuracy, operational reliability, and replenishment effectiveness while maintaining system simplicity and scalability appropriate for a mid-sized e-grocery organization.

The following business objectives are Specific, Measurable, Achievable, Relevant, and Time-bound (SMART):

- Objective 1 – Improve Inventory Accuracy: Decrease inventory variance incidents (reflected through ATP overselling and ROP breaches) by at least 30%.
- Objective 2 – Reduce Replenishment Exceptions and Stockout Risk: Reduce the percentage of SKUs falling below Reorder Point (ROP) by 20% and below Safety Stock by 15%.
- Objective 3 – Increase Inbound Processing Reliability: Ensure 95% of inbound receipts update Quantity on Hand (QOH) and ATP within 15 minutes of receiving completion.
- Objective 4 – Reduce Manual Intervention and Supervisor Workload: Reduce supervisor intervention events related to inventory discrepancies by 25%.
- Objective 5 – Improve Inventory Availability Without Increasing Stock Levels: Improve Days of Cover efficiency (optimize coverage without increasing Total Inventory Value).
- Objective 6 – Establish a Foundation for Data-Driven Inventory Decisions: Standardize KPI definitions and enable monthly operational reviews using consistent inventory dashboards.

3. Analysis of Options

To address the inventory execution and fulfillment challenges identified in the current-state assessment, MapleDash evaluated multiple response options. Each option was assessed against operational impact, scalability, risk, cost, and alignment with MapleDash's current maturity and growth stage.

3.1 Option 1: Do Nothing (Maintain Current Operating Model)

Description

Continue operating with existing processes, relying on manual coordination, supervisor oversight, and ad-hoc corrections to manage inventory accuracy and fulfillment risks.

Implications

- Inventory discrepancies continue to be resolved reactively.
- Supervisor workload increases as order volumes grow.
- ATP reliability remains inconsistent at SKU and location levels.
- SKU-level stock imbalances remain hidden behind aggregate inventory KPIs.
- Supplier variability continues to amplify downstream execution risk without mitigation.

Pros

- No immediate investment required.
- No change management effort.

Cons

- Inventory accuracy issues compound over time.
- Manual controls do not scale with growth.
- Increased risk of stockouts, overselling, order cancellations, and customer dissatisfaction.
- Higher long-term operating costs due to operational firefighting and inefficiencies.

Assessment

This option fails to address the quantified gaps identified in the analysis and exposes MapleDash to escalating operational and customer experience risk. It is not viable for a growing e-grocery operation.

3.2 Option 2: Full System Replacement or Enterprise Digital Transformation

Description

Replace existing IMS and/or WMS components or implement a new enterprise-grade platform with real-time, event-driven integrations and advanced automation capabilities.

Implications

- Significant software, integration, and implementation costs.
- Multi-year delivery timeline.
- High organizational disruption and training overhead.

Pros

- Long-term scalability.
- Advanced capabilities across forecasting, analytics, and orchestration.

Cons

- Disproportionate to current business scale and data maturity.
- High implementation and adoption risk.
- Requires substantial IT capacity and change management.
- Delays realization of near-term operational benefits.

Assessment

While powerful, this option over-solves the problem. MapleDash's challenges are driven by execution discipline and process alignment, not platform limitations. This approach introduces unnecessary cost, complexity, and risk relative to the business need.

3.3 Option 3: Targeted IMS Enhancements with Process-Driven Automation (Recommended)

Description

Enhance the existing IMS to support system-directed workflows, automated inventory updates, and standardized exception handling across core inventory processes, supported by lightweight system integrations.

Key Elements

- System-directed inbound receiving, putaway, replenishment, and cycle counting.
- Automated QOH and ATP updates at defined execution checkpoints.
- Rule-based exception thresholds with supervisor review only for material variances.

- Semi-automated data synchronization between IMS, WMS, and OMS.

Pros

- Directly addresses identified execution and timing gaps.
- Low-to-moderate implementation cost.
- Faster time to value.
- Scales with business growth.
- Minimal disruption to warehouse operations.

Cons

- Does not introduce advanced predictive analytics or real-time orchestration.
- Requires disciplined process adoption and training.

Assessment

This option aligns precisely with the root causes identified in the gap analysis. It delivers measurable improvements in inventory accuracy, ATP reliability, and replenishment effectiveness while remaining appropriate for MapleDash's maturity, risk tolerance, and resource constraints.

3.4 Option Comparison Summary

Criteria	Option 1: Do Nothing	Option 2: Full Replacement	Option 3: Targeted Enhancements
Addresses Root Causes	No	Yes	Yes
Implementation Risk	Low (but growing operational risk)	High	Low–Moderate
Cost	Low upfront, high long-term	Very High	Moderate
Time to Value	None	Long	Short
Scalability	Poor	High	High
Fit for MapleDash	No	No	Yes

3.5 Recommended Option

Option 3: Targeted IMS Enhancements with Process-Driven Automation is the recommended approach.

It provides the optimal balance between impact, cost, speed, and operational realism. Most importantly, it shifts MapleDash's inventory operations from reactive and supervisor-dependent to disciplined, system-led, and scalable, without introducing unnecessary technological complexity.

4. Proposed Solution & Project Definition

4.1 Proposed Solution Overview

MapleDash will implement targeted enhancements to its existing Inventory Management System (IMS) to introduce system-directed execution, automated inventory updates, and standardized exception handling across core warehouse processes.

Rather than replacing systems or introducing enterprise-grade platforms, the solution focuses on improving how inventory-related work is executed, validated, and synchronized within the current operational environment.

The proposed solution transitions inventory management from reactive correction to proactive, rule-based execution, while remaining aligned with MapleDash's scale, data maturity, and growth trajectory.

4.2 Core Solution Components

1. System-Directed Inventory Execution

The IMS will actively guide warehouse operations rather than passively recording outcomes.

- System-directed inbound receiving against ASN
- System-recommended putaway locations
- Risk-based cycle count task generation
- Rules-based replenishment triggers
- System-generated picking tasks.

This reduces reliance on individual judgment and ensures consistent execution across all fulfillment centers.

2. Automated Inventory Updates at Defined Control Points

Inventory updates will occur automatically only after validated execution steps.

- Quantity On Hand (QOH) updated after receiving approval
- ATP recalculated after validated putaway and picking
- Single-point inventory deduction enforcement
- Elimination of delayed or manual reconciliation.

This establishes a single, trusted version of inventory truth across processes.

3. Exception-Based Human Intervention

Human review is reserved for high-impact or high-risk scenarios.

- Threshold-based exception detection
- Supervisor review limited to material variances
- Standardized exception workflows across processes
- Reduced supervisor firefighting and manual overrides

This ensures human effort is applied where it delivers the most value.

4. Lightweight System Integrations

The solution introduces semi-automated, non-real-time integrations between systems.

- Scheduled or near-real-time data synchronization between IMS, WMS, and OMS
- No event-driven or enterprise-scale API orchestration
- Data flows optimized for operational reliability, not architectural complexity.

This supports automation while remaining cost-effective and maintainable.

4.3 In-Scope Items

The following are explicitly included within the scope of this project:

- Enhancements to existing IMS workflows
- System-directed execution for:
    - Inbound receiving
    - Putaway
    - Cycle counting
    - Replenishment
    - Order picking
- Automated QOH and ATP updates
- Exception thresholds and standardized workflows
- Supervisor review mechanisms
- Operational KPI reporting alignment
- Lightweight system integrations
- User training and process adoption support

4.4 Out-of-Scope Items

The following are intentionally excluded to prevent scope creep:

- Full IMS, WMS, or OMS replacement
- Real-time, event-driven enterprise integrations
- Advanced AI or predictive demand forecasting
- Autonomous robotics or hardware automation
- Customer-facing system changes
- Network redesign or warehouse expansion

- Supplier-side system changes (*IMS mitigates supplier impact; it does not fix supplier behavior.*)

4.5 Project Boundaries & Assumptions

- The project enhances existing platforms; no new core systems are introduced.
- Automation is rule-based and workflow-driven, not AI-driven.
- Inventory accuracy improvements are achieved through execution discipline, not new analytics platforms.
- Process standardization applies across all fulfillment centers.
- Organizational change is incremental and operational, not transformational.

4.6 Strategic Alignment

This solution directly supports MapleDash's strategic objectives by:

- Improving inventory accuracy and ATP reliability
- Reducing operational firefighting and supervisor dependency
- Increasing fulfillment reliability without additional inventory investment
- Enabling scalable growth without proportional labor increases
- Delivering rapid ROI with controlled implementation risk

4.7 Summary

The proposed solution is intentionally pragmatic. It addresses the root execution and timing gaps identified through data analysis and process review, using MapleDash's existing systems as a foundation. This approach maximizes operational impact while minimizing cost, disruption, and implementation risk.

5. Financial Analysis (Cost-Benefit & ROI)

5.1 Financial Analysis Objective

The purpose of this financial analysis is to determine whether the proposed IMS enhancement initiative delivers measurable operational and financial value relative to its implementation cost, while remaining realistic for a mid-sized e-grocery business.

This analysis focuses on:

- Tangible, operationally driven benefits
- Conservative cost assumptions
- Short payback period, appropriate for SMB decision-making

5.2 Investment Summary (Estimated)

Cost Category	Description	Estimated Cost (USD)
IMS Configuration & Enhancement	Workflow rules, automation logic, exception handling	$75,000
Lightweight Integrations	Batch sync between IMS, WMS, OMS	$30,000
Process Redesign & BA Effort	Requirements, UAT, documentation	$25,000
Training & Change Enablement	Supervisor + associate onboarding	$10,000
Contingency (10%)	Risk buffer	$14,000
Total Initial Investment		**$154,000**

Assumption: Enhancements are built on existing platforms. No new core system licenses are required.

5.3 Quantified Annual Benefits

5.3.1 Reduction in Inventory Shrinkage & Write-Offs

Current State

- Inventory value: ~$1.6M
- Estimated shrinkage/write-offs: ~4%

Post-Implementation Target

- Reduce shrinkage to ~3%

Annual Benefit

- 1% reduction × $1.6M = $16,000

5.3.2 Reduced Labor Effort from Manual Corrections

Current State

- Manual adjustments, reconciliations, supervisor overrides
- Estimated effort: ~20 hours/week across FCs
- Average fully loaded labor cost: $30/hour

Annual Benefit

- 20 × 52 × $30 = $31,200

5.3.3 Improved Order Fulfillment Reliability

Current State

- Stockouts, pick shortages, ATP overselling
- Conservative estimate: 1% of revenue leakage

Revenue Context

- Annualized revenue: ~$7.5M (based on $5.67M over 9 months)

Annual Benefit

- 1% × $7.5M = $75,000

This includes recovered sales and avoided re-shipments or cancellations.

5.3.4 Working Capital Efficiency (Inventory Turnover)

Current State

- Excess inventory in slow-moving SKUs
- Conservative cash release estimate: 2% of inventory value

Annual Benefit

- 2% × $1.6M = $32,000

5.3.5 Total Annual Quantified Benefits

Benefit Category	Annual Value
Shrinkage Reduction	$16,000
Labor Savings	$31,200
Fulfillment Reliability	$75,000
Working Capital Efficiency	$32,000
Total Annual Benefits	**$154,200**

5.4 ROI & Payback Analysis

Payback Period

- Initial Investment: $154,000
- Annual Benefits: $154,200
- Payback Period ≈ 12 months

3-Year ROI (Conservative)

Metric	Value
3-Year Benefits	$462,600
Initial Investment	$154,000
Net Benefit	$308,600
ROI	**200%+**

Does not include intangible benefits such as customer satisfaction or reduced operational risk.

5.5 Sensitivity Check (Downside Scenario)

Even if only 60% of benefits are realized:

- Annual benefit ≈ $92,500
- Payback ≈ 20 months
- Still financially viable for SMB context

5.6 Intangible & Strategic Benefits (Not Monetized)

- Improved decision confidence across Operations & Planning
- Reduced supervisor burnout and firefighting
- Higher process standardization across FCs
- Strong foundation for future forecasting or analytics initiatives

5.7 Financial Recommendation

Based on conservative assumptions and operationally grounded benefits, the proposed IMS enhancement initiative is financially justified, delivers rapid payback, and aligns with MapleDash's scale and growth trajectory.

6. Risk Assessment & Mitigation

6.1 Purpose of Risk Assessment

This section identifies key risks that could impact the successful delivery or value realization of the proposed IMS enhancement initiative and defines practical mitigation strategies appropriate for a mid-sized e-grocery organization.

The focus is on:

- Operational disruption risks
- Change adoption risks
- Technology and data risks
- Financial and delivery risks

6.2 Risk Register

Risk ID	Risk Description	Likelihood	Impact	Mitigation Strategy	Owner
R-01	Resistance from warehouse staff to new workflows	Medium	High	Involve supervisors early, pilot changes in one FC, provide hands-on training	Ops Manager
R-02	Poor data quality reduces effectiveness of automation	Medium	High	Data validation rules, tolerance thresholds, phased rollout	Inventory Planner
R-03	Supervisors overwhelmed by exception volume initially	Medium	Medium	Exception thresholds tuned post-pilot, dashboards for prioritization	Warehouse Supervisor
R-04	Lightweight integrations fail or delay updates	Low	Medium	Batch sync with retry logic, manual fallback procedures	IT Lead
R-05	Scope creep during enhancement delivery	Medium	Medium	Strict in-scope definition, change control via BA + Ops approval	Business Owner
R-06	Under-realization of projected benefits	Low	Medium	KPI monitoring, post-go-live tuning, benefits realization reviews	Ops Manager

R-07	Temporary productivity dip during transition	Medium	Low	Staggered rollout, overlap old and new workflows briefly	FC Supervisors
R-08	Over-dependence on automation reduces human oversight	Low	Medium	Maintain exception-based reviews, audit logs	Inventory Control
R-09	Training gaps for new associates	Medium	Low	Standard SOPs, quick reference guides, refresher sessions	HR / Ops
R-10	Stakeholder misalignment on success criteria	Low	Medium	Clear KPIs, UAT sign-off, executive review checkpoints	Business Owner
R-11	Continued supplier delivery variability may still create inbound volatility, even with improved IMS controls	Medium	Medium	Earlier visibility of late or incomplete receipts. Faster escalation to Procurement.	Procurement Manager

6.3 Key Risk Themes & Interpretation

6.3.1 Change Management is the Primary Risk

As with most SMB transformation efforts, people and adoption risks outweigh technology risks.

Mitigation focuses on:

- Supervisor enablement
- Pilots over big-bang rollouts
- Clear “why” communication

6.3.2 Data Quality Drives Value Realization

Automation success depends on accurate master data and clean transactions.

This risk is managed by:

- Validation rules
- Exception-based handling
- Controlled tolerance thresholds

6.3.3 Technology Risk is Contained by Design

By avoiding real-time enterprise integrations and AI-heavy solutions, technical risk remains manageable.

Fallback options ensure:

- Operations can continue even if automation temporarily fails
- No single point of failure

6.4 Residual Risk Assessment

After applying mitigation strategies:

- Overall residual risk: Low to Medium
- No single risk threatens business continuity
- Risks are consistent with similar operational enhancement projects

6.5 Risk Governance Approach

- Weekly risk review during implementation
- Risk escalation via Ops Manager
- Post-go-live stabilization window with rapid adjustments

6.6 Risk Conclusion

The proposed IMS enhancement carries manageable and well-understood risks that are appropriate for MapleDash's size, maturity, and operating environment. With proactive mitigation, risk exposure remains within acceptable bounds.

7. Implementation Roadmap & Action Plan

7.1 Purpose

This roadmap outlines how MapleDash will move from approval to value realization in a controlled, low-risk manner.

It emphasizes phased delivery, operational stability, and measurable outcomes aligned with defined inventory KPIs rather than a “big-bang” transformation.

7.2 Implementation Approach

- **Delivery Model**: Hybrid, process-led, incremental rollout
- **Guiding Principle**: Stabilize inventory execution first, then automate selectively
- **Rollout Strategy**: Pilot → Learn → Scale

7.3 Phase-Based Roadmap

7.3.1 Phase 1: Mobilization & Readiness

Timeline: Weeks 1–3

Objectives

- Establish governance and ownership
- Prepare data, people, and environments
- Align success metrics and KPI baselines

Key Activities

- Confirm scope, success metrics, and KPI definitions
- Finalize UAT plan and acceptance thresholds
- Validate master data for SKUs, locations, and suppliers
- Identify pilot fulfillment center

Milestones

- Project kickoff approved
- KPI baseline documented (Inventory Accuracy, ATP Overselling %, % SKUs Below ROP)
- UAT entry criteria met
- Pilot FC selected

Primary Owner: Business Owner

Supporting Roles: Business Analyst, Operations Manager, Inventory Planner

Dependencies

- Business case approval
- BRD sign-off

7.3.2 Phase 2: Core IMS Enhancements Build

Timeline: Weeks 4–9

Objectives

- Implement agreed process-driven IMS enhancements
- Enable automation with controlled exception handling

Key Activities

- Configure ASN validation and inbound exception workflows
- Implement system-directed putaway and replenishment
- Enable cycle count automation with variance thresholds
- Configure single inventory deduction logic

Milestones

- Core features configuration complete
- Internal system validation passed

Primary Owner: IT Lead

Supporting Roles: Business Analyst, Operations Manager

Dependencies

- Clean and validated master data
- Approved functional requirements

7.3.3 Phase 3: Pilot Rollout & UAT

Timeline: Weeks 10–13

Objectives

- Validate solution effectiveness in live operations
- Fine-tune thresholds and workflows based on real usage

Key Activities

- Execute UAT scenarios across all five scoped processes
- Capture and resolve defects
- Train supervisors and associates at pilot FC
- Adjust tolerance thresholds and exception routing rules

Milestones

- UAT sign-off achieved
- Pilot go-live approval granted

Primary Owner: Warehouse Supervisor (Pilot FC)

Supporting Roles: Business Analyst, Inventory Control

Dependencies

- Completed build
- Trained pilot users

7.3.4 Phase 4: Stabilization & Optimization

Timeline: Weeks 14–17

Objectives

- Ensure operational stability
- Validate early KPI improvements

Key Activities

- Monitor
    - Inventory Accuracy
    - ATP Overselling %
    - Exception Volume
    - % SKUs Below ROP and Safety Stock
- Address early operational issues
- Fine-tune replenishment and cycle count rules

Milestones

- Stable operations confirmed
- Initial KPI improvements validated against baseline

Primary Owner: Operations Manager

Supporting Roles: Inventory Planner, Warehouse Supervisors

Dependencies: Successful Pilot go-live

7.3.5 Phase 5: Scaled Rollout Across FCs

Timeline: Weeks 18–22

Objectives

- Extend benefits across all fulfillment centers

- Standardize inventory execution practices

Key Activities

- Roll out IMS enhancements to remaining FCs
- Deliver refresher training
- Retire redundant manual practices

Milestones

- All FCs live on enhanced IMS workflows
- Standard operating model adopted

Primary Owner: Operations Manager

Supporting Roles: Warehouse Supervisors, IT Lead

Dependencies

- Stabilized pilot performance
- Training completion

7.3.6 Phase 6: Benefits Realization & Handover

Timeline: Weeks 23–26

Objectives

- Confirm sustained business value
- Transition ownership to business-as-usual operations

Key Activities

- Measure benefits against baseline KPIs:
    - Inventory Accuracy
    - ATP Overselling %
    - Inventory Turnover
    - Days of Inventory
    - % SKUs Below ROP and Safety Stock
- Document lessons learned
- Hand over operational ownership to business teams

Milestones

- Benefits realization report approved
- Formal project closure completed.

Primary Owner: Business Owner

Supporting Roles: Business Analyst, Operations Manager

Dependencies: Full rollout completion

7.4 Summary Timeline View

Phase	Duration	Key Outcome
Mobilization	3 weeks	Readiness confirmed
Build	6 weeks	Core capabilities implemented
Pilot & UAT	4 weeks	Solution validated
Stabilization	4 weeks	Operations normalized
Rollout	5 weeks	Enterprise adoption
Closure	4 weeks	Value realized

7.5 Why This Roadmap Works for MapleDash

- Avoids operational disruption
- Prioritizes learning before scaling
- Matches SMB change capacity
- Aligns tightly with data-driven KPIs
- Keeps ownership clear at every step

8. Monitoring & Evaluation – Benefits Realization Plan

8.1 Purpose

The success of the proposed IMS enhancements will be measured using existing operational KPIs already tracked in MapleDash's Power BI dashboards.

No new KPIs are introduced as part of this initiative. This ensures that benefits realization is practical, transparent, and immediately actionable for leadership.

The KPIs listed below represent the baseline operational health of inventory accuracy, working capital efficiency, fulfillment stability, and supplier reliability. Improvements in these metrics will indicate successful gap closure between the current state and the desired future state.

8.2 Benefits Realization Framework

8.2.1 Inventory Accuracy & Availability Control

The primary objective of the initiative is to improve inventory accuracy and prevent customer-impacting stock issues.

KPIs Used

- % SKUs Oversold (ATP < 0)
- % SKUs Below Reorder Point (ROP)
- % SKUs Below Safety Stock
- Total ATP Quantity
- Median Sellable Coverage (Days)

How Success Is Measured

- Reduction in ATP oversold SKUs indicates improved real-time inventory accuracy.
- Lower percentages of SKUs below ROP and safety stock demonstrate proactive replenishment.
- Stable ATP quantities and balanced median sellable coverage confirm even stock distribution across SKUs.

8.2.2 Inventory Efficiency & Working Capital Optimization

The initiative aims to reduce excess inventory while maintaining service levels.

KPIs Used

- Total Inventory Value
- Inventory Turnover (Annual)
- Days of Inventory

- Days of Cover

How Success Is Measured

- Reduced total inventory value without service degradation reflects leaner stock holding.
- Improved inventory turnover indicates faster movement of goods.
- Lower days of inventory and days of cover confirm reduced overstocking and improved capital efficiency.

8.2.3 Expiry Risk & Waste Reduction

The initiative addresses expiry exposure through better rotation, visibility, and replenishment discipline.

KPIs Used

- Value Expiring < 30 Days
- Days of Inventory
- Median Sellable Coverage (Days)

How Success Is Measured

- Reduction in near-expiry inventory value demonstrates better inbound validation and stock rotation.
- Lower sellable coverage variance indicates healthier stock age profiles across SKUs.

8.2.4 Sales & Demand Fulfillment Stability

Operational improvements must support consistent order fulfillment and predictable workload.

KPIs Used

- Total Orders
- Avg. Daily Orders
- Total Order Quantity
- Total Revenue

How Success Is Measured

- Stable average daily orders indicate smoother operational flow.
- Alignment between total orders, order quantities, and revenue reflects improved inventory availability and fulfillment consistency.

8.2.5 Supplier Reliability & Inbound Risk Reduction

Supplier performance directly affects inbound accuracy and downstream stability.

KPIs Used

- On-Time Delivery (OTD) %
- Avg. Lead Time (Days)
- Top-3 Supplier Qty Share %
- Avg. Unit Cost

How Success Is Measured

- Improved visibility of supplier performance
    - On-Time Delivery % and lead time variability are consistently measured and reported across all suppliers using standardized logic.
    - Procurement gains early warning indicators for high-risk suppliers.
- Reduced operational impact of poor supplier reliability
    - Inbound delays and quantity variances result in fewer downstream inventory inaccuracies.
    - Receiving exceptions are detected earlier and resolved faster, reducing ATP distortion and replenishment disruption.
- Improved risk awareness, not immediate supplier behavior change
    - Supplier concentration risk is visible and monitored, enabling informed sourcing decisions outside the scope of this project.
    - No assumption is made that supplier OTD will immediately improve due to IMS changes.

8.3 Monitoring Cadence & Ownership

- **Monitoring Tool**: Power BI Service (existing dashboards)
- **Review Cadence**:
    - Weekly: Inventory accuracy, replenishment, ATP metrics
    - Monthly: Inventory efficiency, expiry exposure, supplier performance
- **Primary Owners**:
    - Operations Manager – Inventory accuracy & fulfillment KPIs
    - Inventory Planner – ROP, safety stock, coverage metrics
    - Procurement Manager – Supplier KPIs
    - Finance – Inventory value & working capital impact

8.4 KPI Baseline vs Target

KPI	Baseline	Target (6 Months)
Inventory Turnover	6.5x	8.0x
% SKUs Oversold	2.9%	<1%
% SKUs Below ROP	17.3%	<10%
Days of Inventory	56	≤50
Median Sellable Coverage	33	≤30

8.5 Benefits Realization Governance

Benefits realization will be reviewed during regular operations and planning meetings using the same dashboards already adopted by the business.

This ensures:

- No reporting overhead
- No KPI redefinition
- Immediate visibility into whether the identified gaps are closing

8.6 Closing Note

By anchoring benefits realization to existing, trusted KPIs, MapleDash ensures that improvements from the IMS enhancement initiative are measurable, credible, and aligned with day-to-day decision-making.

Appendix A: Gap Analysis Summary

A.1 Purpose of This Appendix

This appendix documents the structured gap analysis that underpins the MapleDash Inventory Operations Enhancement business case.

The gap analysis:

- Establishes the evidence-based rationale for change
- Connects data analysis → process gaps → system enhancements
- Provides traceability from current-state pain points to future-state outcomes
- Serves as supporting evidence, not the primary decision document

This appendix complements the Business Case and should be read as its analytical foundation.

A.2 Step 1: Scope, Strategic Objectives, and Stakeholders

Scope Boundary

The gap analysis focuses on inventory execution and control within MapleDash's internal operations, specifically:

Processes in Scope

- Inbound Receiving
- Putaway
- Cycle Counting & Inventory Adjustments
- Replenishment (Backstock → Picking Zones)
- Order Picking & Packing

Outbound delivery logistics and supplier internal operations are excluded.

Systems in Scope

- Inventory Management System (IMS)
- Lightweight interactions with WMS and OMS (non-real-time)

Explicitly Out of Scope

- Supplier internal processes
- Real-time enterprise integrations
- Advanced forecasting or AI
- Last-mile delivery operations

Strategic Objectives (Aligned to BRD)

The analysis supports the following business objectives:

- Improve inventory accuracy and ATP reliability
- Reduce manual intervention and supervisor dependency
- Enable rules-based replenishment and counting
- Improve operational scalability without increasing inventory
- Establish a single version of inventory truth

Stakeholders (Summary)

Key stakeholders include:

- Warehouse Associates
- Warehouse Supervisors
- Warehouse Operations Manager
- Inventory Planning / Control Team
- Procurement
- IT / Systems Support

Detailed stakeholder analysis is documented separately and referenced here.

A.3 Step 2: Current State Assessment (Evidence-Based)

Data Sources

Current-state analysis is grounded in:

- Power BI dashboards (Inventory Health, Demand, Supplier Performance)
- Inventory, Order, and Supplier datasets
- AS-IS process maps
- Operational observations

Key Current-State Findings (From Data Analysis)

Area	Evidence
Inventory Accuracy	Despite sufficient total inventory, 2.9% of SKUs experience ATP overselling, highlighting delays and inconsistencies between physical inventory movement and system updates. This confirms that stockouts are driven by execution gaps rather than supply shortages.
Inventory Distribution	Median Sellable Coverage (33 days) exceeds Days of Cover (28 days), indicating that a subset of SKUs holds disproportionately high inventory while many operational SKUs have much tighter

	coverage. This imbalance masks localized stockout risk despite healthy aggregate inventory levels.
Replenishment Control	17.3% of SKUs below ROP, 8.7% below safety stock. This demonstrates delayed replenishment triggers and over-reliance on manual intervention. This condition increases pick-time shortages and operational firefighting.
Inventory Turnover	Inventory Turnover Below E-Grocery Benchmarks. Annual inventory turnover of 6.5x falls below expected benchmarks for e-grocery operations, confirming that inventory capital is not being converted into sales efficiently.
Supplier Reliability	Average supplier on-time delivery of 66.7% introduces inbound timing variability that amplifies execution risk. While supplier performance is outside system control, improved inbound exception handling and inventory discipline mitigate downstream impact.
Manual Dependency	High supervisor intervention across inbound, putaway, and counting
Cycle Counting	Reactive adjustments rather than risk-based coverage

Current State Process Characteristics

1. Inventory Visibility Gaps

- Inventory accuracy varies significantly across SKUs and warehouses
- Aggregate KPIs appear stable, masking SKU-level risks
- Median coverage exceeds average Days of Cover, indicating uneven stock distribution.

Impact:

Hidden stockout risk despite acceptable headline metrics.

2. Manual and Delayed System Updates

- Inventory updates often occur after physical movement, not at the moment of action
- Reliance on delayed syncs and manual confirmations persists in multiple processes.

Impact:

- ATP overselling
- Picking shortages

- Reconciliation effort downstream

3. Supervisor-Centric Exception Handling

- Exceptions across inbound, putaway, cycle counting, and replenishment frequently require manual supervisor review
- No consistent thresholding to distinguish low-risk vs high-risk variances.

Impact:

- Supervisor workload inflation
- Inconsistent decision-making
- Operational bottlenecks during peak periods

4. Reactive Replenishment Behavior

- Replenishment is triggered inconsistently and often reactively
- Pickers encounter shortages that should have been resolved upstream.

Impact:

- Picking delays
- Increased exception handling
- Reduced fulfillment reliability

Evidence Sources

- Power BI dashboards (Inventory Health, Supplier Performance, Warehouse Performance)
- AS-IS process maps across five operational processes
- KPI baseline metrics (inventory accuracy, coverage, turnover, exception rates).

A.4 Step 3: Define Desired Future State

The desired future state is not a technology overhaul, but an execution-focused operational model.

Future State Principles

- System-directed execution, not passive recording
- Automation for routine decisions, humans for material exceptions
- Defined control points for inventory updates
- Consistency across all FCs
- Lightweight integration, appropriate to maturity

Target Future State Outcomes

- QOH and ATP updated within minutes, not hours

- Replenishment triggered before pick-face depletion
- Cycle counts prioritized by risk, not calendars
- Supervisor effort focused only on true anomalies
- Improved trust in inventory KPIs used by Operations, Planning, and Procurement

A.5 Step 4: Identify and Quantify the Gaps

Core Gaps Identified

Gap Category	Current State	Desired State
Inventory Updates	Delayed, manual	Automated after validated actions
Replenishment	Reactive	Rules-based and proactive
Exception Handling	Broad, manual	Threshold-driven and filtered
SKU Coverage	Uneven	Risk-aware and balanced
Supervisor Load	High	Reduced through automation

Quantification of Gaps (Using KPIs)

- 2.9% oversold SKUs → indicates execution timing gaps
- 17.3% SKUs below ROP → replenishment triggers not systematic
- High variance SKUs unmanaged → cycle counting not risk-based
- 56 days inventory with uneven coverage → inefficiency, not shortage

These metrics quantify the performance delta between current and desired states.

A.6 Step 5: Root Cause Analysis

Root causes were identified using structured analysis (process review + data triangulation).

Primary Root Causes

1. Execution-System Disconnect
    a. Physical actions occur before system updates
    b. ATP and QOH lag execution
2. System Capability Limitations
    a. IMS supports updates but relies heavily on manual initiation
    b. Automation exists inconsistently across processes
3. Over-Reliance on Human Judgment
    a. Supervisors involved in routine decisions
    b. Lack of automated thresholds
4. Behavioral Dependencies
    a. Supervisors act as control mechanisms instead of escalation points
    b. Associates rely on manual judgment where system guidance should exist.
5. Aggregate Metrics Mask Risk

    a. Healthy totals hide SKU-level issues
    b. Volatility not operationalized
6. Inconsistent Control Points
    a. Inventory updates occur at multiple, unclear stages
7. Supplier Variability Amplifies Weak Controls
    a. Poor OTD increases inbound volatility
    b. IMS lacks mitigation mechanisms (alerts, visibility)
8. Control and Governance Weaknesses
    a. KPIs calculated consistently but not operationally enforced
    b. No clear demarcation between routine and exception scenarios

Root causes were identified using process walkthroughs with stakeholders, data analysis, and cross-process pattern recognition.

A.7 Step 6: Change Strategy and Solution Direction

Strategic Overview

Bridge gaps through process-led IMS enhancements, not system replacement.

Key Change Levers

- System-directed task generation
- Automated QOH & ATP updates at defined points
- Exception thresholds with supervisor escalation only when required
- Standardized execution across all FCs
- KPI-aligned operational controls

Prioritization Logic

Changes prioritized based on:

- Impact on inventory accuracy
- Reduction in manual intervention
- Risk exposure at scale
- Time-to-value

A.8 Step 7: Monitoring and Evaluation Plan

Measurement Approach

Progress toward closing gaps will be tracked using existing Power BI dashboards, monitoring:

- Inventory Accuracy %
- ATP Overselling %
- % SKUs Below ROP / Safety Stock

- Days of Inventory
- Median Sellable Coverage
- Supervisor Exception Volume
- Inventory Turnover

Governance

- Monthly operational KPI reviews
- Exception trend analysis
- Continuous threshold tuning
- Ownership transitioned to Operations post-implementation

These metrics become the **benefits realization framework** in the Business Case.

A.9 Summary & Link to Business Case

This gap analysis demonstrates that MapleDash's challenges stem from execution discipline and control gaps, not lack of systems or data.

By Anchoring findings in data, Quantifying gaps using KPIs, Identifying actionable root causes, and Proposing proportionate, process-led enhancements, the gap analysis provides the analytical backbone for the Business Case and justifies targeted investment in IMS enhancements.