

Receipt-Verified TLC

Leveraging downstream receipt scanning and cross-system data sharing
to close distributor outbound lot code gaps under FSMA 204

The Distributor Outbound TLC Challenge



Scanning Is Prohibitive

Distributors ship thousands of mixed-lot cases daily. Outbound scanning requires expensive automation or significant labor — most cannot justify the cost.



Estimation Has Limits

Calculated, range, and probabilistic TLC methods rely on WMS data and inventory rotation logic. They carry inherent accuracy limitations.

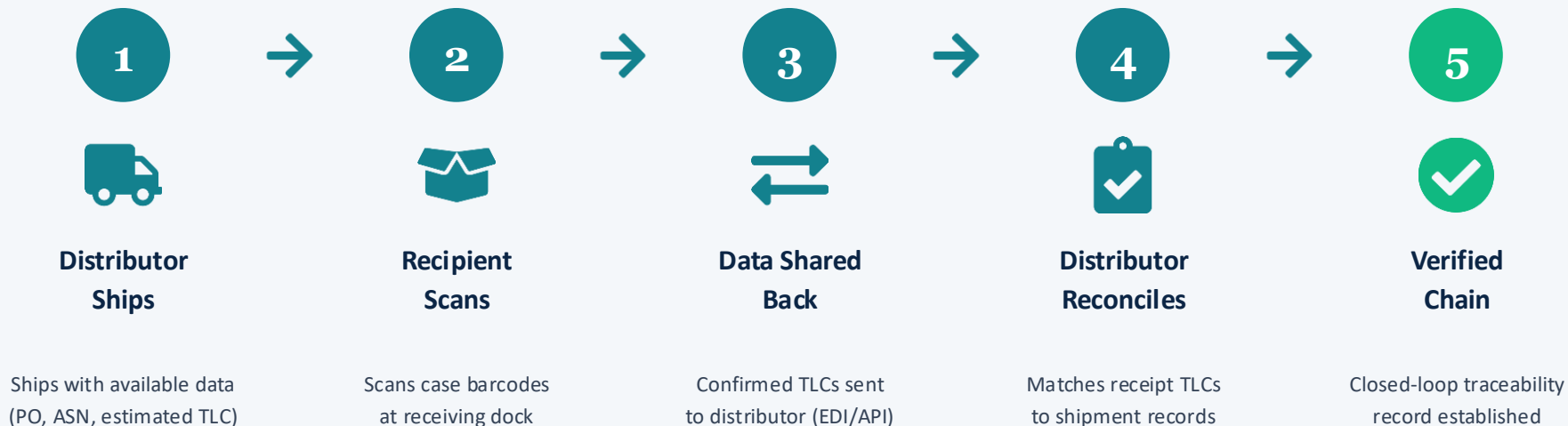


Receipt Data Is Underutilized

Many recipients already scan incoming product at receiving docks. This confirmed TLC data is not shared back upstream — a missed opportunity.

25% of convenience stores already scan on receipt (CDA). Grocery retailers, club stores, and foodservice distributors have significantly higher adoption.

Receipt-Verified TLC: How It Works



Key Insight: This method fills the lot-level gap in existing ASNs and POs. Most distributor shipments already include electronic documentation — but these records lack TLC data. Receipt verification enriches them with confirmed lot codes without changing outbound workflows.

Building on Proven Foundations

PFT's Cucumber Interoperability Pilot demonstrated that cross-system traceability data sharing works.

Interoperability Achieved

Three independent solution providers (Kezzler, Starfish, PeerLedger) exchanged CTE/KDE data across a simulated cucumber supply chain using GS1 identifiers and APIs.

ASN-Based Exchange Works

ASNs and modern APIs significantly reduced friction vs. paper-based systems, providing a reliable mechanism for moving traceability data between platforms.

End-to-End Views Assembled

Coherent traceability views were assembled across all three platforms, producing electronically sortable record sets showing complete upstream paths.

Practical Lessons Captured

Master data alignment, data translation between operational and reporting formats, and permissioning frameworks were identified as key design considerations.

This pilot applies those proven foundations to a specific, high-impact use case: the distributor outbound TLC gap.

Pilot Scenarios

1 Single-Lot Shipment



2 Mixed-Lot Shipment



3 Cross-Docking / Direct Ship



Optional Extension Scenarios

4 Calculated TLC Validation — Receipt scan confirms accuracy of WMS-estimated TLC **5 Range TLC Narrowing** — Scan narrows range to definitive TLC

Filling the Lot-Level Gap in Existing Transactions

ASNs and POs already flow between trading partners — but they lack lot-level TLC data. Receipt verification enriches these records.

ASN-to-Receipt Matching

EDI 856 ASNs include product and quantity but not lot codes. Receipt scans add the missing TLC data at the line-item level.

PO-to-Receipt Matching

Where ASNs aren't available, POs (EDI 850) anchor the transaction. Receipt confirmations establish which TLCs delivered against which orders.

EPCIS Event Pairing

Shipping and Receiving events paired by business transaction IDs. The receiving event provides definitive TLC data.

Platform-Based Exchange

Data-sharing platforms normalize formats across systems, providing a shared audit trail without point-to-point integrations.

Key Metrics & Pilot Parameters

Metric	What It Measures	Target
Receipt Scan Rate	% of shipments where recipient captures TLC data	Baseline + improvement
Data Return Latency	Time from receipt to TLC availability at distributor	< 24 hours for 90%+
Match Rate	% of receipt TLCs matched to shipment records (PO/ASN)	> 95% successful matching
Calculated TLC Accuracy	% of estimated TLCs matching receipt-confirmed TLCs	Baseline measurement
Coverage Rate	% of outbound FTL volume receipt-verifiable	Scalability estimate

Pilot Parameters

Products: FTL products (fresh produce, leafy greens, cheese, fresh-cut)

Duration: 8–12 weeks active exchange + 4 weeks setup + 4 weeks analysis

Volume: Minimum 500 shipment-receipt pairs

Participants: Distributors + recipients (grocery, foodservice, processors) + technology providers

Next Steps

In support of PFT's mission to coordinate pilots and share learnings that advance practical, interoperable traceability solutions.

Interested?

Submit pilot plans to PFT

Present concept, methodology, and alignment with TLC/TLCS Flexibility pilot program

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