

FROM FORECAST TO FULFILLMENT: HOW AGENTIC AI IS REWIRING CPG OPERATIONS



The CPG industry is at a turning point as increasing complexity, market volatility, and rising consumer expectations expose the limitations of traditional supply chains. Agentic AI offers a transformative approach through autonomous, goal-driven agents that embed intelligence into operations, enabling adaptive decision-making, proactive optimization, and resilient supply chains that can respond dynamically to changing business conditions.

The background of the page features a stylized illustration of a bar chart with four vertical bars of increasing height from left to right. Each bar is topped with a silver shopping cart, suggesting a progression or growth in retail or supply chain metrics. The bars are a light brown color, and the shopping carts are a metallic silver. The sky in the background is a clear, light blue.

Introduction

This Point of View explores how agentic AI is transforming end-to-end CPG supply chain operations from demand forecasting to final delivery by embedding autonomous, decision-making intelligence into each stage of the value chain. Rather than treating supply chain activities as isolated functions, this POV presents a connected, intelligent ecosystem where agents continuously sense, decide, and act.

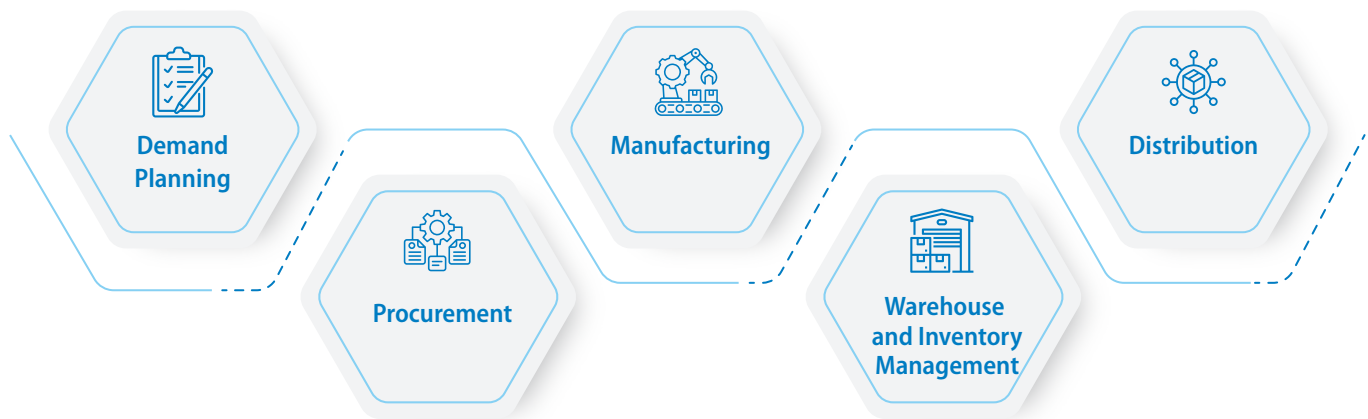
For CPG organizations, the value lies in moving beyond reactive operations toward proactive and adaptive decision-making. By leveraging agent-driven intelligence, businesses can improve forecast accuracy, reduce operational inefficiencies, respond faster to disruptions, and ultimately deliver better service levels while optimizing costs and working capital.

The document is structured as a step-by-step journey across the five core supply chain processes: demand planning, procurement, manufacturing, warehousing, and distribution. Each section highlights key challenges, introduces a set of purpose-driven AI agents, and explains how these agents resolve operational gaps—together forming a cohesive, intelligent supply chain model.

THE SUPPLY CHAIN PROCESSES ARE:

The CPG supply chain spans five critical stages: demand planning, where future customer needs are forecasted; procurement, focused on sourcing materials and negotiating supplier contracts; manufacturing, which converts raw inputs into finished goods with quality and compliance checks; warehousing and inventory

management, ensuring efficient storage, tracking, and order fulfillment; and distribution, the final link that delivers products swiftly and accurately to retailers or consumers. Together, these interconnected processes form the backbone of supply chain performance and customer satisfaction.



DEMAND PLANNING

Demand planning is one of the initial steps. It involves forecasting and estimating future customer demand based on historical data, market trends, promotional plans, and other factors. The output of this step is a single, unified demand plan for the entire organization. Demand planning is the process of forecasting future customer demand to align all business operations, from production to inventory, with what the market needs.

A robust demand planning system integrates multiple elements to ensure accuracy and agility. It begins with

statistical forecasting, leveraging historical sales data and models to establish a baseline forecast. Collaborative planning then brings together sales, marketing, and finance teams to create a consensus forecast that accounts for promotions and new product launches. To stay responsive, demand sensing uses real-time data from sources like Point-of-Sale (POS) systems to detect immediate shifts in consumer behavior. Finally, scenario planning enables businesses to simulate potential outcomes such as competitor actions or supply chain disruptions, so they can prepare for diverse future events.



Pain Points in Demand Planning



Unreliable Historical Data

Late or incomplete retailer promo data means the consensus forecast is built on guesswork — driving post-promotion overstock or in-window stockouts.



Data Imbalance

Modern trade, e-commerce, and general trade offtake rarely sit in one place — forcing planners to reconcile manually before forecasting can even begin.



Inventory Mismanagement Due to Poor Forecasting

A 5% SKU-level forecast error means write-offs on slow movers and lost sales on fast movers — with no visibility into why, the same mistakes repeat every cycle.



Lack of Foresight

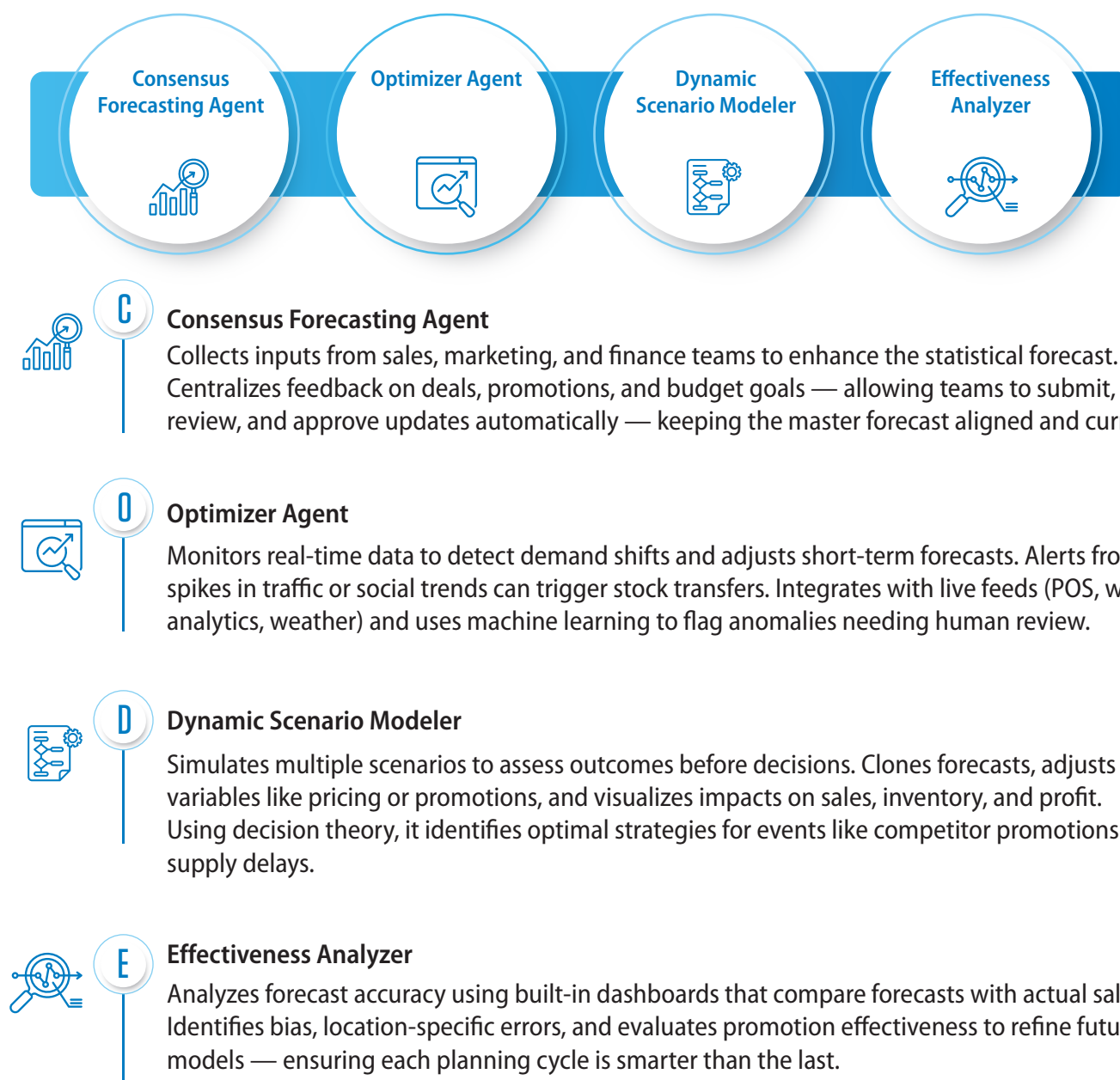
A competitor price move or raw material shortage surfaces too late. Without scenario simulation, the response is always reactive — emergency transfers, margin erosion, missed service levels.

To address the complexities in demand planning, a coordinated set of specialized CODE agents is introduced. Each agent is designed to own a specific decision area, ranging from data consolidation and forecast generation

to scenario simulation and real-time demand sensing. Together, they operate as a cohesive unit, continuously learning from incoming signals and improving forecast accuracy while reducing manual intervention.

CODE Agent: Piecing Together Predictability in Demand Planning

CODE Agent represents a shift from AI as a tool to AI as a participant in the planning process. Unlike traditional forecasting software that surfaces information and waits, the CODE Agent's four sub-agents — Consensus Forecasting, Optimizer, Dynamic Scenario Modeler, and Effectiveness Analyzer — operate autonomously, share signals with each other, and take action within defined boundaries. This multi-agent architecture embodies agentic AI: goal-directed, continuously learning, and capable of orchestrating complex workflows without step-by-step human instruction. The result is a demand planning system that doesn't just support decisions, it drives them.





Transformation Approach

Operationalize real-time, self-learning planning



Standardize

Unify SKU-level demand signals across POS, ERP, and trade promotion systems into one cleansed data layer



Deploy

Activate Consensus Forecasting Agent first — align commercial and finance inputs before the next S&OP cycle



Shift

Move planners to exception-only intervention — act only when Effectiveness Analyzer flags deviation beyond threshold

Organizations can adopt a Standardize–Deploy–Shift transformation approach. The CODE Agent starts by consolidating SKU-level demand signals from POS, ERP, and trade promotion systems into a unified data layer. It then deploys the Consensus Forecasting Agent to align commercial and finance inputs, while the Effectiveness Analyzer continuously monitors forecast deviations and alerts planners only when intervention is required. Finally, planners shift to an exception-based operating model, intervening only when the Effectiveness Analyzer flags a deviation beyond threshold. This enables a real-time, self-learning demand planning process.

PROCUREMENT

After demand forecasting, the next step is procurement, a strategic function that focuses on sourcing and purchasing raw materials, ingredients, and packaging in a way that ensures product availability, maintains quality standards, and optimizes overall costs for CPG operations. For instance, when a CPG firm plans to launch a new orange juice flavor with added antioxidants, procurement begins with supplier sourcing and evaluation, identifying vendors for key components such as fresh oranges, antioxidant powder, bottles, and labels. This is followed by negotiation and contracting, where managers secure favorable terms such as long-term contracts for oranges to hedge against price volatility and bulk discounts for antioxidant powder along with custom packaging

agreements. The process concludes with purchase order creation, issuing separate orders for each component to ensure timely delivery and smooth production.

To overcome procurement inefficiencies, a focused set of agents can manage supplier intelligence, contract optimization, and purchase execution. These agents work together to ensure informed, timely, and cost-effective sourcing decisions. At the center of the procurement ecosystem is the TRUST Agent, which continuously evaluates supplier performance, monitors contractual obligations, and provides intelligence-driven recommendations to strengthen sourcing outcomes and procurement resilience.



Frequent Challenges Experienced by Procurement Managers in Their Routine Tasks



Lack of Centralized Data

Scorecards in spreadsheets, complaints in email, OTD buried in ERP, buyers assemble supplier data manually, raising the risk of choosing the wrong vendor at the wrong price.



Risk of Poor Supplier Selection

One unreliable packaging vendor for labels or bottles can delay an entire product launch — losing shelf space, retailer confidence, and first-mover advantage.



Manual Contract Management

Commodity contracts for palm oil, sugar, or wheat renew late because no system flags expiry. Missed windows mean reverting to spot pricing, eroding margins locked at better rates.



Limited Visibility into Market Rates

Without real-time benchmarking, buyers negotiate blindly, leaving cost savings on the table every quarter on key inputs like PET resin or antioxidant powder.



Fragmented Communication

Packaging specs and pricing negotiated across email threads with multiple vendors creates version chaos — one misread email means incorrect labels in production and retailer chargebacks.



Manual Follow-ups and Communication Overload

Procurement teams spend hours chasing PO confirmations, time that should go to category strategy, cost analysis, and supplier development.

TRUST Agent: Locking in the Right Pieces for Procurement Precision

TRUST Agent transforms procurement from a reactive, email-heavy process into a proactive command center. It autonomously evaluates suppliers, benchmarks market rates, enforces contract timelines, and communicates with vendors — so procurement managers spend less time chasing data and more time making strategic decisions.

**T**

Track Eval Agent continuously scores suppliers on defect rate, return rate, OTD, lead time, and order fulfillment accuracy — surfacing the right vendor before a purchase decision is made, not after a problem occurs.

**R**

Real Time Agent monitors live commodity prices, supplier trends, and benchmark rates by automatically flagging when market conditions create a negotiation opportunity or cost-savings risk.

**U**

Utilizing intelligent automation, the Infosys Contract Agent streamlines data extraction, sends timely reminders for renewals and expirations, and integrates seamlessly with other systems-filling critical gaps in ERP-driven procurement workflows.

**S**

Supplier Communication Agent uses AI to automate vendor follow-ups interpret emails, extract key data, and update purchase orders-boosting productivity, reducing procurement costs, and minimizing manual errors.

**T**

True Audit Agent monitors every procurement activity against policy and regulatory standards in real time by auto-generating audit trails and surfacing anomalies for human review before they become compliance failures.

Transformation Approach

Drive proactive procurement, compliance, and governance



Standardize

Map Tier-1 supplier contracts, flag renewals due within 90 days, consolidate vendor performance into one repository



Deploy

Activate Track Eval Agent to score suppliers on defect rate, OTD, and lead time before every purchase decision



Shift

Replace periodic compliance reviews with auto-generated audit trails — teams focus on negotiation, not data chasing

To realize the full value of the TRUST Agent, organizations can adopt a Standardize–Deploy–Shift transformation approach. The procurement journey begins by standardizing supplier information through a centralized repository that consolidates Tier-1 supplier contracts, performance metrics, and renewal timelines. The TRUST Agent is then deployed to execute continuous supplier evaluation by analyzing key indicators such as defect rates, on-time delivery (OTD), lead times, contract compliance, and sourcing risks before procurement decisions are made. As procurement activities progress, the agent generates audit-ready insights, tracks contractual obligations, and proactively identifies opportunities for intervention. This enables organizations to shift from periodic manual reviews to an automated, intelligence-driven procurement model where procurement teams can focus on strategic sourcing, supplier negotiations, and value creation rather than administrative monitoring and data collection.

MANUFACTURING

The manufacturing stage of the supply chain is a complex yet critical process, though certain core steps remain consistent across industries. It begins with production, where specialized equipment and automated systems are used to mass-produce goods efficiently and consistently. Next comes quality control, which involves rigorous in-process monitoring and final product testing to ensure safety and integrity. Packaging and labeling prepare products for sale, applying accurate information and compliant labels while protecting the product and maintaining brand relevance. Together, these steps ensure that

manufacturing delivers reliable, high-quality products to meet market demand.

In manufacturing, agents are embedded across production, compliance, and maintenance workflows to ensure quality, safety, and operational continuity through real-time monitoring and predictive decision-making. At the heart of this ecosystem is the FORM Agent, which orchestrates manufacturing intelligence by connecting operational data, compliance requirements, and equipment insights to enable proactive and efficient production management.



Persistent Challenges in Production



Worker Safety and Compliance

On a high-speed FMCG line, a missed inspection or unanswered OHS query can mean a workplace incident, line shutdown, or regulatory penalty — manual processes simply cannot keep pace.



Regulatory Compliance

A mislabeled allergen or a packaging claim that misses FSSAI or FDA standards triggers a recall — damaging brand equity and costing multiples of what a compliant process would have required.



Equipment Maintenance and Downtime

An unplanned filling line breakdown during peak promotion means missed retailer windows, out-of-stocks at the highest-demand moment, and non-fulfillment penalties against committed volumes.



Inventory and Production Management

Without real-time visibility into raw material availability and demand signals, manufacturers overproduce slow variants and underproduce fast movers — inflating working capital while failing service levels simultaneously.

FORM Agent: Shaping the Core of Production with Precision

FORM Agent turns the factory floor into a self-regulating system, rather than waiting for failures, non-compliance events, or quality escapes to surface, FORM's agents continuously monitor, predict, and act — keeping production lines running, workers safe, and products market-ready.



F

Factory Safety Agent is a low-code Microsoft Copilot Studio tool that enhances factory safety by automating inspections, answering OHS queries, personalizing training, and streamlining incident reporting. It integrates with Microsoft 365 and supports data-driven responses, note conversion, and email summaries.¹



O

Operation Agent ingests live factory data to provide production visibility, conduct root cause analysis on equipment underperformance, and improve worker collaboration — directly raising equipment utilization and output.



R

Reliable Agent uses computer vision and OCR to compare live packaging images against golden templates in real time — autonomously flagging labeling errors and branding deviations before products leave the line.



M

Microsoft Predictive Maintenance and Quality Agents use IoT and operational data to forecast equipment failures, optimize maintenance, and detect quality issues. They apply AI-driven analytics and anomaly detection to minimize downtime and improve reliability.²

Transformation Approach

How to operationalize FORM agents



Standardize

Deploy IoT sensors on three highest-downtime machines first — build a clean operational baseline before activating agents



Deploy

Activate Predictive Maintenance Agent fleet-wide — configure Reliable Agent golden templates for top 10 SKUs first



Shift

Automate quality and safety inspections — teams intervene only on anomalies flagged by Factory Safety and Reliable Agents

It begins by establishing a reliable operational baseline through IoT-enabled monitoring of critical assets. Organizations then deploy predictive maintenance and production intelligence agents to proactively monitor equipment and production performance. Finally, manufacturing teams shift to an exception-based operating model, intervening only when quality, safety, or equipment issues require attention. This enables more proactive, reliable, and efficient manufacturing operations.

WAREHOUSE AND INVENTORY MANAGEMENT

Warehouses serve as more than storage facilities they are vital hubs in the supply chain, ensuring products are stored safely and remain readily available for fulfillment. The process begins with receiving and storing goods, which may involve specialized methods such as cold storage for perishables or high-security areas for valuable items. Next, inventory tracking and monitoring maintains real-time visibility of stock levels, item locations, and movement to prevent mismatches and delays. Finally, order fulfillment combines speed and accuracy, handling picking, packing, and shipping so customers receive the right products on time, every time.

Warehouse operations are supported by agents that optimize inventory visibility, space utilization, and fulfillment accuracy—ensuring faster and more reliable order processing. The WRAP Agent acts as the intelligence layer across warehouse operations, continuously monitoring inventory movements, storage utilization, and fulfillment activities to identify inefficiencies and recommend corrective actions. By coordinating real-time warehouse data and operational workflows, it helps improve inventory accuracy, streamline fulfillment processes, and enhance overall warehouse productivity.



Operational Gaps in Warehouse Processes



Stock Mismatch

When WMS shows 500 cases but the floor holds 300, the shortfall surfaces only at dispatch, short shipment, retailer chargeback, and promotion window missed entirely.



Space Inefficiency

Poor slotting across ambient, chilled, and frozen zones pushes fast-movers far from dispatch bays — increasing pick travel time, slowing throughput, and raising cost-per-case across the operation.



Manual Follow-ups

A cycle count discrepancy flagged on paper and escalated via email takes days to resolve — meanwhile orders are picked against inaccurate records, eroding retailer fill rates downstream.



Fulfillment Delays

Inefficient pick paths, manual packing checks, and paper-based shipping notices consistently miss modern trade delivery windows — triggering deductions, damaging retailer scorecards, and risking delisting.

WRAP Agent: Sealing the Gaps in Inventory and Fulfillment

WRAP Agent is the warehouse's intelligent operations layer — reconciling physical stock with system records, coordinating robotics, optimizing shelf placement, and ensuring every shipment notice is accurate. It acts before discrepancies cause delays, so fulfillment runs with precision at every step.

**W**

Warehouse Automation Agent

Collaborates with warehouse robotics to manage goods movement, optimize storage allocation, and drive order fulfillment — reducing manual handling and accelerating throughput without additional headcount.

**R**

Reconciling Physical Inventory

Logs cycle counts, cross-references them against WMS/ERP records, flags mismatches, and alerts managers via dashboard — triggering financial review automatically when deviations exceed defined thresholds.

**A**

Advanced Shipping Notice Agent

Scans and inspects incoming pallets, records final counts against purchase orders, and auto-calculates discrepancies — ensuring the system reflects what is physically on the floor before goods are put away.

**P**

Product Zoning Agent

Analyzes SKU velocity, weight, size, and order patterns to dynamically assign products to the optimal warehouse zone — placing fast-movers near dispatch, grouping co-picked items together, and automatically re-slotting inventory as demand shifts — cutting pick travel time and maximizing floor throughput.

Transformation Approach

Orchestrate intelligent warehouse operations in real time



Standardize

Reconcile WMS and ERP records at SKU level — eliminate stock mismatches before activating any warehouse agent



Deploy

Deploy WRAP Agent to automate cycle counts, flag mismatches, and trigger financial review without manual steps



Shift

Shift fulfillment teams to exception-based workflows — act only when WRAP surfaces deviations beyond set thresholds

The journey begins by reconciling WMS and ERP records at the SKU level to eliminate stock mismatches and establish a trusted inventory baseline. Organizations then deploy the WRAP Agent to automate cycle counts, identify inventory discrepancies, and trigger financial reviews without manual intervention. Finally, fulfillment teams shift to an exception-based operating model, acting only when the WRAP Agent detects deviations beyond predefined thresholds. This approach enables greater inventory accuracy, improved warehouse visibility, and more efficient fulfillment operations.

DISTRIBUTION

Distribution is the final and most critical link in the CPG supply chain, ensuring products move swiftly and safely from warehouses to retail shelves, customer doorsteps, or institutional buyers such as hotels and hospitals. It goes beyond transportation demanding precision, speed, and visibility. The process begins with transportation planning, where routes are optimized for location, urgency, and cost-efficiency. Next, dispatch and shipment load products onto delivery vehicles for timely dispatch to retailers or customers. Tracking and monitoring provide real-time visibility of shipment progress, capturing proof of delivery digitally or manually. Finally, returns handling manages reverse

logistics for damaged or unsold goods, ensuring smooth and efficient return flows.

In distribution, agents orchestrate transportation planning, dispatch prioritization, and delivery tracking to enable efficient, on-time, and cost-optimized logistics execution. The DROP Agent serves as the command center for distribution operations, continuously analyzing shipment data, delivery constraints, and network conditions to optimize routing decisions and improve delivery performance. By coordinating logistics activities end to end, it helps reduce transportation costs, enhance visibility, and ensure reliable fulfillment outcomes.



Distribution Complexities in CPG Logistics



Transportation Planning Challenges

Manually routing a hypermarket, distributor hub, and hospital canteen each with different windows and vehicle needs, results in suboptimal loads, missed deliveries, and rising cost-per-drop.



Dispatch and Shipment Bottlenecks

Without dynamic carrier selection, refrigerated priority loads and standard ambient pallets compete for the same vehicle, priority shipments miss windows while lower-value freight occupies capacity.



Tracking and Monitoring Gaps

A retailer queries a delivery. The dispatcher calls the driver. The driver is unreachable. A thirty-second query becomes a thirty-minute crisis, repeated across dozens of shipments every single day.



Returns Handling Complexity

Returned goods from modern trade sit in a holding bay for days awaiting manual inspection — inventory idle, credit note delayed and working capital impact compounding with every unresolved case.

DROP Agent: Delivering the Final Piece with Speed and Accuracy

DROP Agent is the last mile's intelligence layer — it doesn't just track shipments, it actively optimizes how they move. From autonomous carrier selection to real-time rerouting and self-managing returns, DROP ensures every delivery decision is data-driven, not dispatcher-dependent.



D

Dynamic Optimization for Carrier Selection Agent

Autonomously balances speed, cost, and reliability to select the right carrier for each shipment — prioritizing urgent or high-value loads while steering lower-priority freight toward cost-efficient options.



R

Returns and Reverse Logistics Agent

Manages the full returns lifecycle — from customer initiation to condition inspection and disposal routing — automating decisions on refurbishment, resale, or write-off without manual intervention.



O

Oli-Bot Agent

It simplifies return management by automating the entire process. Infosys' Oli-Bot can inspect returned products and then automatically handle the rest of the return procedure.



P

Path Optima Agent

Analyzes real-time traffic, weather, and road closures to dynamically reroute deliveries mid-journey — predicting arrival times with high accuracy and saving time and fuel across every route.

Transformation Approach

Enable autonomous, real-time last-mile optimization



Standardize

Consolidate carrier data, delivery SLAs, and shipment records into one unified layer before enabling autonomous routing



Deploy

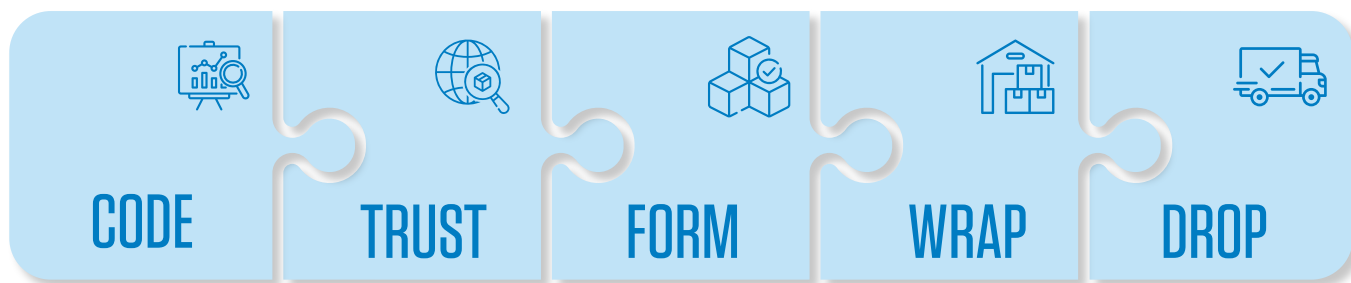
Activate Dynamic Optimization Agent to assign carriers by priority, cost, and speed — removing dispatcher dependency



Shift

Move to real-time rerouting via Path Optima — dispatchers intervene only when exceptions exceed agent capability

The adoption of the DROP Agent typically follows a Standardize–Deploy–Shift transformation approach by first consolidating carrier data, delivery SLAs, and shipment records into a unified layer. It then deploys the Dynamic Optimization Agent to assign carriers based on priority, cost, and speed. Finally, logistics teams shift to exception-based operations through Path Optima, intervening only when issues exceed the agent's capabilities. This enables faster, cost-efficient, and more responsive last-mile delivery.



Conclusion

Stop managing your supply chain reactively. Deploy intelligent agents directly into demand planning, procurement, manufacturing, warehousing, and distribution. Each agent must own a decision, not just surface an insight — triggering replenishment, renegotiating supplier terms, adjusting production schedules, routing shipments, and rebalancing inventory without waiting for human intervention.

Target your three biggest operational failures first: the data silos that blind your planners, the forecasting errors that inflate safety stock, and the manual workflows that slow every handoff. Agents fix all three simultaneously, by connecting systems, learning from signals, and acting at machine speed.

Do not replace your ERP. Layer agents on top of it. Your ERP becomes the execution backbone; your agents become the intelligence tier that reads it, reasons over it, and writes decisions back into it. This is how you convert a transactional system into a dynamic nerve center, one that delivers real-time visibility, autonomous process optimization, and continuous self-improvement across the entire supply chain.

Autonomy does not mean unchecked action. Every agent operates within defined guardrails — thresholds, escalation triggers, and audit trails — that route high-value or high-risk decisions to a human before execution, while routine decisions run at machine speed. Each agent also improves on its own: the **CODE** Agent's Effectiveness Analyzer compares forecasts to actual sales and refines the model every planning cycle; the **TRUST** Agent's True Audit Agent auto-generates audit trails and flags policy deviations in real time; the **FORM** Agent surfaces safety and compliance anomalies for review before they become incidents; the **WRAP** Agent flags inventory discrepancies beyond a set threshold rather than posting adjustments outright; and the **DROP** Agent's Path Optima escalates only when a routing decision exceeds its own confidence. This combination of bounded autonomy and continuous learning is what lets agents act decisively in the routine and defer appropriately in the exception.

The result is not incremental efficiency. It is a structural shift: from fragmented and reactive to orchestrated, resilient, and proactive and a supply chain that becomes harder to compete against every day it runs.

References:

1. [Factory Safety Agent](#)
2. [Maintenance Prediction Agent](#)

About the Author



Poly Choudhury is a Retail Consultant at Infosys with over 12.5 years of experience in retail consulting, AI-led transformation, merchandising, and digital innovation. She advises global enterprises on retail transformation initiatives, leveraging AI and emerging technologies to create scalable solutions and measurable business value. Her passion lies in building next-generation retail capabilities that accelerate growth and enhance customer experiences.



For more information, contact askus@infosys.com

© 2026 Infosys Limited, Bengaluru, India. All Rights Reserved. Infosys believes the information in this document is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of other companies to the trademarks, product names and such other intellectual property rights mentioned in this document. Except as expressly permitted, neither this documentation nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, printing, photocopying, recording or otherwise, without the prior permission of Infosys Limited and/ or any named intellectual property rights holders under this document.