How a Leading FMCD Company Improved OTIF and Reduced Supply Chain Costs with 3SC



15%
Increase in OTIF

25%
Increase in Order Fulfilment

8%
Reduction in Supply Chain Costs

10%
Reduction in Inventory Carrying Cost

About the Client

The client is a leading FMCD company operating a large distribution network across India, with products moving through central and regional distribution centres before reaching an extensive dealer network.

As the distribution network grew, replenishment inefficiencies, frequent stockouts and inventory build-up at RDCs, high transportation costs, and limited visibility across operations began affecting service levels and supply chain efficiency. The business needed a more connected distribution model that could improve fulfilment, optimise transportation, and provide greater control over inventory movement.

> Over the course of this transformation, we gained far better visibility and control across our distribution network. More structured dispatch planning and improved vehicle utilisation have helped our teams strengthen service levels while also reducing logistics and inventory costs."
>
> *Head of Supply Chain Operations*

The Challenge

- Inefficient replenishment to Regional Distribution Centres due to a transit-time-based fulfilment model
- Project-based dispatches reduced dedicated vehicle utilisation, increased ad hoc vehicle dependence,and raised OTIF and transportation cost pressures.
- Data hygiene and coordination challenges across supply chain operations
- High transportation and distribution costs
- Limited real-time visibility across the distribution network
- Dependence on manual processes for distribution and loading decisions
- Lack of standardised vehicle loading patterns
- Inefficient utilisation of available vehicle capacity
- Limited optimisation of dealer routes and dispatch planning
- Frequent stockouts or excess inventory build-up at RDCs

The Solution

Building a More Efficient Distribution Network Through Optimisation, Visibility and Execution

3SC redesigned the client's distribution operations by combining network optimisation, route planning, integrated WMS and TMS, vehicle load optimisation, and advanced dispatch planning.

1. Distribution Network

3SC optimised dealer clusters and delivery routes to improve product flow across the network. Satellite warehouse locations, including Lal Bazar and Majerhat in West Bengal, were evaluated using both internal network data and external operating constraints. The analysis considered demand concentration, dealer coverage, order-to-delivery lead time, logistics cost, route feasibility, distance travelled, service-level requirements, and local delivery constraints. This helped position inventory closer to demand, reduce unnecessary movement, and improve last-mile distribution performance.

2. Integrated WMS, TMS and Control Tower

An integrated WMS and TMS operating model, supported by a Control Tower, improved visibility and coordination across warehousing, transportation, dispatch, and distribution activities.

3. Optimised Vehicle Loading with MaxLoad

3SC's MaxLoad solution improved vehicle capacity utilisation by creating structured loading patterns based on truck space, weight limits, SKU characteristics, stacking requirements, and delivery priorities. SKU-level loading guidance also helped standardise loading practices, reduce unused capacity, and minimise product movement and damage during transit.

4. Advanced Dispatch Planning

The prime target was to reduce transportation cost. 3SC identified that poor replenishment planning was causing frequent stockouts, which in turn reduced vehicle utilisation and increased dispatch inefficiency. Advanced dispatch planning from the NDC helped improve load consolidation, route planning, vehicle allocation, and SLA-aware dispatch decisions. The model also reduced dependence on ad hoc vehicles by improving the utilisation of dedicated vehicles and enabling more structured dispatch execution.

5. Secondary Distribution and Route Optimisation

- Network Design: Dealer clustering and route optimisation aligned dealer demand with the right warehouse and route configuration. Three larger warehouses were selected based on sales concentration and market visits, while satellite warehouses, including Lal Bazar and Mazarhat, were chosen using sales concentration, 52% and 15% respectively, and dealer coverage.
- Execution Planning: Dedicated vehicle deployment, labour planning, and milk-run deployment were considered to improve secondary distribution execution. External factors such as no-entry restrictions, vehicle movement timings, loading windows, and delivery cut-offs were factored in to improve delivery adherence, reduce ad hoc movement,

Implementation Scope

- Distribution network optimisation
- Dealer clustering and restructured route planning
- Secondary distribution optimisation
- Satellite warehouse network design, including deployment for no-entry constraint management
- Dedicated vehicle and labour deployment
- Milk-run deployment for secondary distribution
- Integrated WMS and TMS
- Supply Chain Control Tower
- Vehicle load optimisation through MaxLoad
- SKU-wise vehicle loading guidance
- Vehicle volume and weight utilisation optimisation
- Advanced dispatch planning from NDC
- Inventory and replenishment coordination

Why 3SC

3SC connected network design, distribution planning, transportation, warehouse operations, vehicle loading, and Control Tower visibility within one operating model. By improving dealer clustering, dispatch planning, satellite warehouse deployment, and load optimisation, the solution strengthened fulfilment and distribution efficiency across the network.

The transformation delivered a 15% increase in OTIF, 25% improvement in order fulfilment, 8% reduction in supply chain costs, and 10% reduction in inventory carrying costs.

