

Truck Load Optimization (TLO)

Consumer Packaged Goods and Distribution



Organizations globally are revamping their distributor management and supply chain processes to better manage disruptions with agility. Even as cloud-based offerings integrated with multiple enterprise resource planning (ERP) systems and distributor management system (DMS) grow in popularity, challenges including high transportation costs, and mismanagement of truck load and space due to lack of real time insights and other road transportation limitations persist. Current trends indicate organizing outbound shipment to help truck capacity optimization and applying strategies such as mixed integer linear programming (MILP) techniques and transporter allocation algorithm solutions can be cost effective. From procurement to delivery, incorporating enhanced time management and optimized execution are key factors that require critical analysis.

TCS' Truck Load Optimization and Transporter Management system enables improved truck utilization and transportation management by leveraging MILP techniques and monitoring key performance indicators (KPIs) for efficient distribution and reduced freight costs.

Overview

In today's hyper-volatile market, supply chain dynamics play a determining role across industries. It is imperative for businesses to invest in smooth, predictable product flow from procurement to delivery with a concrete transportation strategy in place. However, high transportation costs due to disintegrated and unstable supply chains, lack of real-time visibility into truck availability and load utilization and sub-optimal third-party logistical (3PL) allocation driven by contractual obligations are some of the challenges that impede transport operations. This also results in increased carbon footprint and high execution time across the value chain.

TCS' Truck Load Optimization (TLO) and Transporter Management System uses MILP, truck analytics, product mix and transporter data to help centralize the transport planning process, provide a single pane of view into truck and transport operations and reduce overall transportation cost. TLO enables transporter planning based on monthly shipment forecast, 24-hour advance planning and real-time load optimization. It also provides management solutions for optimal execution, bills and claims management and truck order management. With real-time qualitative and quantitative metrics scorecards and KPIs, TCS addresses service performance initiatives.

Our Solution

TCS's TLO solution (see Figure 1) combines information on truck types, transporter data and product mix to enable:

Truck Load Optimization:

- Enabling monthly forecasting of number and types of trucks
- Preparing trucks 24 hours ahead of schedule
- Optimizing run vehicle load in real time by weight and volume
- Identifying limitations at product hierarchy level and type of packaging based on truck type
- Recommending filler stock keeping units (SKUs) to optimize truck utilization and product mix based on number of delivery destinations and truck type
- Prioritizing earliest reserved SKUs for optimization

Transporter Management:

- Simplifying transporter allocation
- Delivering reports and dashboards
- Enabling alerts and notifications
- Executing truck order
- Facilitating bills and claims management

Transporter Service Performance:

- Providing scorecards with qualitative and quantitative metrics to boost informed decision making

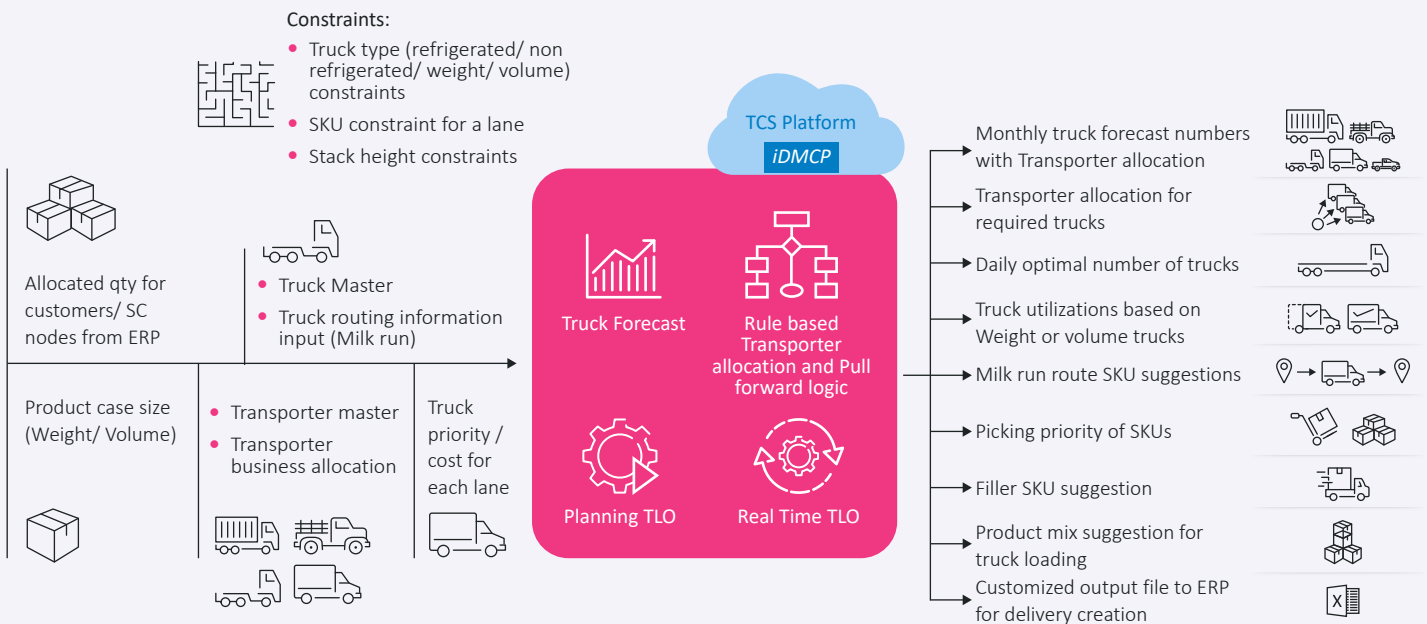


Figure 1: TLO's Truck Load Optimization Framework

Benefits

TCS' TLO offers quantifiable benefits including:

- Enhanced truck utilization with automated tendering
- Superior truck forecast
- Improved collaboration with channel partners and integration with multiple systems
- Slashed transportation costs and carbon footprint with enhanced visibility and control and increased efficiency in distribution
- Reduced manual efforts with automated manual processes
- Actionable real-time insights for enhanced decision making

The TCS Advantage

TCS has proven expertise in offering supply chain management solutions to CPG, retail, manufacturing and distribution and high-tech industries. So, by joining hands with TCS, enterprises across the globe can leverage:

- **Industry partnerships and alliances:** We lean into our strategic partnerships with hyperscale cloud providers to build best-in-class connected vehicle platforms. Our solution is built using microservices-based architecture and can be easily integrated into any customer landscape through our application programming interfaces (APIs).
- **The right blend of technology and domain expertise:** TCS has extensive experience in delivering supply chain solutions for CPG companies with business segment-specific templates.
- **Domain experience:** We bring in deep industry experience through partnerships with seven of the top ten CPG companies globally. We actively engage with over 80 customers across the CPG domain.

Contact

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About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is a purpose-led transformation partner to many of the world's largest businesses. For more than 50 years, it has been collaborating with clients and communities to build a greater future through innovation and collective knowledge. TCS offers an integrated portfolio of cognitive powered business, technology, and engineering services and solutions. The company's 469,000 consultants in 46 countries help empower individuals, enterprises, and societies to build on belief.

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