Abstract
Infosys built an optimization engine that evaluates inventory at hundreds of stores across US and multiple DCs to find lowest cost to serve. The optimization engine gave less than 90 millisecond response times and could handle peak 50K per hour confirmed orders.
Business Challenge

- **Changing Market Dynamics** As more consumers shop online the foot traffic at stores have reduced. The inventory of seasonal items at the stores go into deeper markdowns costing retailers millions of dollars each season.

- **Customers have new demands** Customers now expect to know by SKU how much is left in stock if in short supply. Very early in the customer journey they want to know the exact delivery date by standard or free shipping method.

- **Operational Challenge** Legacy order sourcing engines are rigid rules based that follow a predetermined decision tree logic. There is a need to dynamically change the rules when the business requirements change. With ship-from-store feature, the complexity of order sourcing from a bouquet of node options has additional dynamic variability of labor, shipping, pricing and sales velocity.
Infosys Solution

• Infosys order sourcing optimization is designed for high volume real-time response when customer is still shopping online.

• Each order and their lines are unique considered for best sourcing node based on available inventory, the inventory velocity, the markdowns current or future, the current labor capacity, labor costs, shipping costs, shipping times, safety levels for sure picks. The node or nodes that gives maximum benefit are picked for that order sourcing.
Benefits to customer

- Retailer was able to receive clear dollar benefits due to markdown reversals. Entire investment was realized in the first quarter of going live.

Key benefits include

- Sold store markdown inventory at online price.
- Positive benefit after store labor and shipping cost.
- Faster delivery times to end consumers.
- Balanced store capacity and inventory consumption.