

CASE STUDY

Developing an Integrated Sales & Operations Planning Solution

for a retailer with 500+ warehouses to reboot demand and supply dynamics



Customer Context

As a leading retailer with \$50+ billion in sales and 500+ warehouses, the client wanted to develop an automated sales and operations planning solution for their fulfillment centers (FCs) based on demand forecasts and supply capacity constraints.

Historically, the client's solution had forecasting accuracy issues, requiring manual intervention in operations and supply planning. Therefore, they wanted to partner with a change agent and develop an automated sales & operations planning (S&OP) solution that can –

- Generate bottom-up and top-down demand forecasts
- Provide recommendations for transportation plans and truck pickup schedules

The objective was to improve demand & supply dynamics and streamline the S&OP process to enhance customer experience, thereby reducing planning cycle time.

Our Solution Approach

We helped the client build a custom, agile, and scalable S&OP solution following a three-step approach:



Outbound Order Planning Module

Arrive at one planning number agreed by all stakeholders



Carrier Scheduling Module

Align supply-side & demand-side dynamics



Web-App Module

Orchestrate and monitor the planning performance





Creating a Comprehensive Demand Consensus Module for all Outbound Planning Orders

Tredence took a unique approach to generate highly accurate forecasts using an ensemble of more than 15 algorithms (mix of time-series, machine learning, and packaged algorithms like Facebook Prophet) on data extracted from multiple sources.



The result

The module successfully generated accurate outbound forecasts for each fulfillment center at the category level. The approach also provided the client a buffer of one month to streamline their operational planning.

Building a Carrier Scheduling Module to Drive Consensus

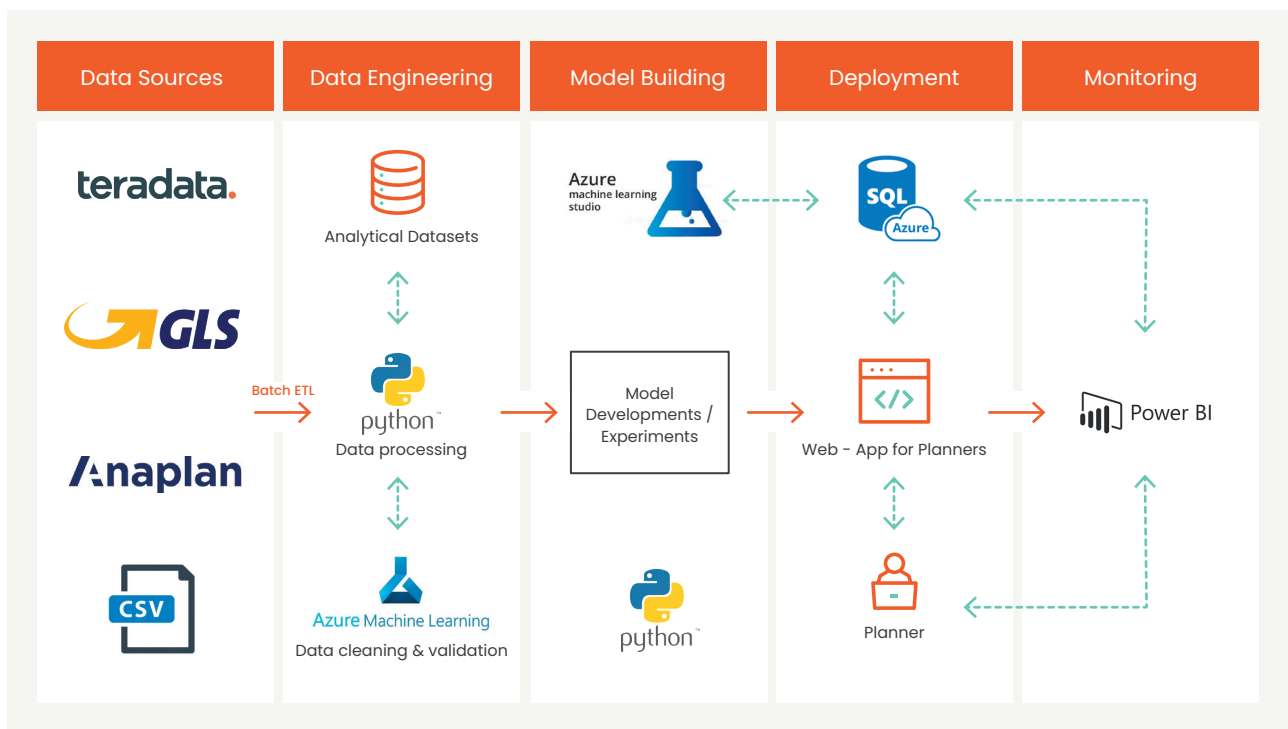
Tredence developed an automated carrier scheduling module based on capacities & constraints pertaining to each route and carrier combination. The optimization algorithm was purpose-built to minimize carrier costs and reduce various constraints on capacity, routes, shipping, and carriers.

The result

The module allowed the client to plan trailer-level outbound shipments one month in advance.

Establishing a Single Source of Truth with Custom Web-App Module

With extensive experience in full-stack development and functional supply chain knowledge, Tredence designed and developed a cloud-based and lightweight web application architecture for the client to orchestrate and monitor the entire S&OP process through a single dashboard to build trust and improve collaboration between the stakeholders.



The result

The solution provided the client to adjust the forecast numbers based on trade promotions or FC ramp-ups and rerun the demand planning and carrier scheduling module.

The Bottom Line: The client leveraged our Integrated Sales & Operations Planning (IS&OP) to streamline operations and reach a consensus between demand plans & supply factors.

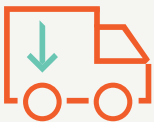
Tredence adopted a phased implementation approach and deployed the S&OP solution in the retailer's five fulfillment centers. The approach enabled the client to organize and coordinate their sales and operations planning processes, providing transparency and visibility to all stakeholders involved in the S&OP cycle.

The impact :



10%

Improvement in the stock availability across five fulfillment centers (FCs)



8%

Reduced overall outbound transportation cost



5-15%

Increased order forecasting accuracy



50%

Reduction in S&OP cycle-time (from 4 weeks to 2 weeks)

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