



ACCELERATING DIGITAL TRANSFORMATION WITH AI/ML

Overview

Infosys helps a large transportation service provider to build an AI/ML based solution within a digital brokerage business that improves win rate per spot load and doubles revenues.

Client

Client is a US based transportation and logistics company. It is one of the largest trucking firms in USA and earned \$500+ million in revenue in its last FY. They are working as freight brokers to arrange carriers for shippers. Client loads most its 17,000 trailers and 7,000 trucks with general commodities. Its principal types of freight include foodstuffs, plastics and plastic products, general retail store merchandise, chemicals, paper and paper products, and manufacturing materials and supplies. The company has added new forms of transportation and extended its services to foreign markets, while increasing its capability to haul special kinds of freight.

Business Challenge

Shippers would transport their goods directly, via a carrier, or using a freight broker. A freight broker procures load from a shipper and arranges a carrier to transport the load. In this process, the broker charges an amount to the shipper (Shipper price) and pays an amount to the carrier which is the PTE (Paid Transportation Expense). The difference between the shipper price and the PTE is called as the brokerage margin.

The client was facing challenges in calculating the paid transportation expense (PTE) accurately, that is acceptable to the carrier while ensuring that the customer service levels are exceeded, at the same time maximizing the gross margin per employee within brokerage business.

- Shippers, Carriers and Brokers –All use the same market databases (Dial A Truck (DAT), FreightWaves SONAR) to quote prices. Rates are led by notional factors rather than value (supply/ demand and other load considerations)
- Spot bid win rate is approximately 2%, which they intend to improve to gain market share
- Securing carrier capacity is very expensive, impacting overall margin

Key Objectives

- Increase bid win rate
- Increase gross margin per employee per day
- Doubling revenues
- Increase market share in digital brokerage business



Infosys Solution

Conventional rule-based calculations to predict PTE (Paid Transportation Expense) was being done by the client. However, this approach led to standard pricing throughout the year and no consideration to the market fluctuations. Infosys built multiple machine learning models in an ensemble approach to predict the PTE (Paid Transportation Expense) and Shipper price considering various external indices.

Below is the list of machine learning models which were built by Infosys to address the problem:

Dynamic Pricing to predict market rate

Multiple AI/ML models were built in an ensemble approach

- Dynamic pricing offers opportunities for brokers
- They can systemically deliver value-based pricing to their shippers while procuring capacity (volume from carriers)
- Model predicts the market rate for current date and 14 days forward

Predict Carrier Rate

Apply carrier specific attributes to accurately predict Paid Transportation Expense (PTE)

- Based on predicting market rate per lane, create a rate with certainty for carrier
- This model considers fleet capacity, vehicle type, age of vehicle, appointment windows and price negotiation conversation details to arrive at a carrier specific rate.
- Infosys extended the lane and load model to accommodate carrier-based pricing for the most transacted (80% of broker's business) lanes

Margin Optimization

Implementation of AI/ML to freight match for profits

- Digital marketplaces are evolving in ways to gain market share
- Lower costs are the only method used pervasively by marketplaces to lure shippers and carriers
- Infosys developed a dynamic shipper pricing model where client proposes a 14-day pricing
- Shippers can choose from a range of prices and service levels
- The model freight matches the 'load to truck' ratio while preserving margins for client

Key Benefits

- Client realized \$12M to \$18M annual savings while procuring carrier capacity for their spot-market demands.
- Client doubled their win rate and the revenues within a year from \$650M to \$1.2B using the carrier prediction model.
- Automated pricing improved productivity and revenue generation per employee, which enabled the client to increase the number of loads managed by an employee from six loads per day to unlimited loads.



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