



Intelligent Prescriptive Pricing and Tender Collaboration

The solution leverages Google's Cloud AI machine learning service to analyze diverse business contexts, their impact on prices, and dynamic customer scenarios to recommend optimal bids on shipping contracts.

Project Overview

The intelligent prescriptive pricing solution streamlines the RFP response and freight pricing process for third-party logistics providers. The solution serves as a collaborative platform for decision makers to analyze bids and make informed decisions based on analytical insights. The solution offers intuitive dashboards for freight brokers and pricing analysts to view historic and future trends.

Client Profile

US-based fintech company that offers a cloud-based customer success platform for logistics service providers. Their proprietary solution helps logistics service providers streamline the RFP process, minimize scope creep (unnecessary delay), and build customer relationships at scale.

Business Challenges

The client faced challenges in analyzing variables that impact pricing and required an intelligent system that would predict the optimal price that aligns with business objectives. There was a need to improve efficiency in the existing RFP and pricing workflow.

- ▲ Delays in determining lane-level pricing and bid analysis for shipping contracts
- ▲ Analyzing large amounts of internal and external data from various sources was time consuming
- ▲ Low bid win rate

Solution

A cloud-based solution that ensures lane/pricing standardization, automates qualification, and integrates predictive pricing for informed decision-making. The solution does this based on changing scenarios and predicts the right outcome with a high level of accuracy.

The solution comprises three modules:

- ▲ Shipper file processing
- ▲ Pricing advisory
- ▲ Market intelligence

In the 'Extract' phase we identify the sheet, predict header rows, columns required, and rows to skip. In the 'Transform' phase, we apply basic transformations to data, and in the 'Load' phase, we lookup and load from extracted data.

The solution enables stakeholders to upload the shipper's RFP and adjust settings such as tender ID, date, origin, industry, destination, mode, services among other parameters. The pricing advisory and market intelligence modules join forces to help streamline the end-to-end pricing process by validating prices from globally indicated benchmarks leveraging AI/ML capabilities.

Solution Highlights

- ▲ APIs implemented using NodeJS; UI is hosted in S3 and served using Cloudflare
- ▲ Microservices deployed as Docker containers using Kubernetes and AWS EKS
- ▲ Event-driven processing using SQS, SNS, Lambda, and RabbitMQ as a service on dedicated EC2 instances from CloudAMQP

Key Features

- ▲ Real-time view of current bid value and RFP progress, offering a unified source for pricing and dynamic factors. Data is consistently formatted across the organization providing a comprehensive analysis of margins and awards.
- ▲ Visualization of historical rates and factors that impact pricing – empowers analysts to quickly compare rates and margins for accurate bidding.
- ▲ Automated pricing recommendation leveraging market data, customer data, and business heuristics to estimate pricing that optimizes RFP win rate and overall profitability.

Technologies

- ▲ Google AI
- ▲ AWS
- ▲ RDS Postgres
- ▲ ReactJS, Node.js
- ▲ React Native
- ▲ EKS
- ▲ Docker
- ▲ Cloudflare
- ▲ RabbitMQ
- ▲ S3
- ▲ Kubernetes
- ▲ Python Pandas
- ▲ Naive Bayes - Probability classifier
- ▲ TF-IDF based on mono, bi, and trigrams
- ▲ Scikit-learn
- ▲ Visualization - Histogram



Business Benefits

- ▲ 43% increase in overall bid win rate
- ▲ 95% faster quoting by enabling standardized pricing across bids
- ▲ Highly accurate pricing forecasts with real-time insights
- ▲ Automated assignment of lanes based on custom stakeholder criteria



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