



USING DATA SCIENCE AND ENGINEERING TO BUILD A PRICE ELASTICITY ESTIMATOR AT LUFTHANSA GROUP

Airlines face a constant tension: they need to keep fares low enough to be competitive, but high enough to retain profit margins in a business that has significant fixed costs. Lufthansa envisioned a predictive analytics solution to ensure maximum occupancy with optimum yield.

The company partnered with Mindtree to engineer the Price Elasticity Estimator (PELE), which forecasts the demand in future and optimal seat price to offer consumers. It uses a custom machine learning model to analyze the historical sales and computes the marginal revenue.

The solution platform that Mindtree created leverages the distributed architecture and was built using Microsoft R, Java, Spark on Scala and Hadoop. The system works through historical sales

data stored on Lufthansa's Hadoop cluster, stores the predictions in a custom database, then provides demand curves and marginal revenue to business users with a flexibility to influence the estimates to reflect the market dynamics.

Mindtree defined the IT execution strategy to build and deploy the complex system, automating unit tests and institutionalized continuous integration and continuous deployment (CI/CD).

The new model in the current state has been rolled out to a number of markets across Lufthansa Group Hub Airlines realizing the benefits through increase in revenues and yield. The future plan is to scale PELE to more markets across the globe.

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