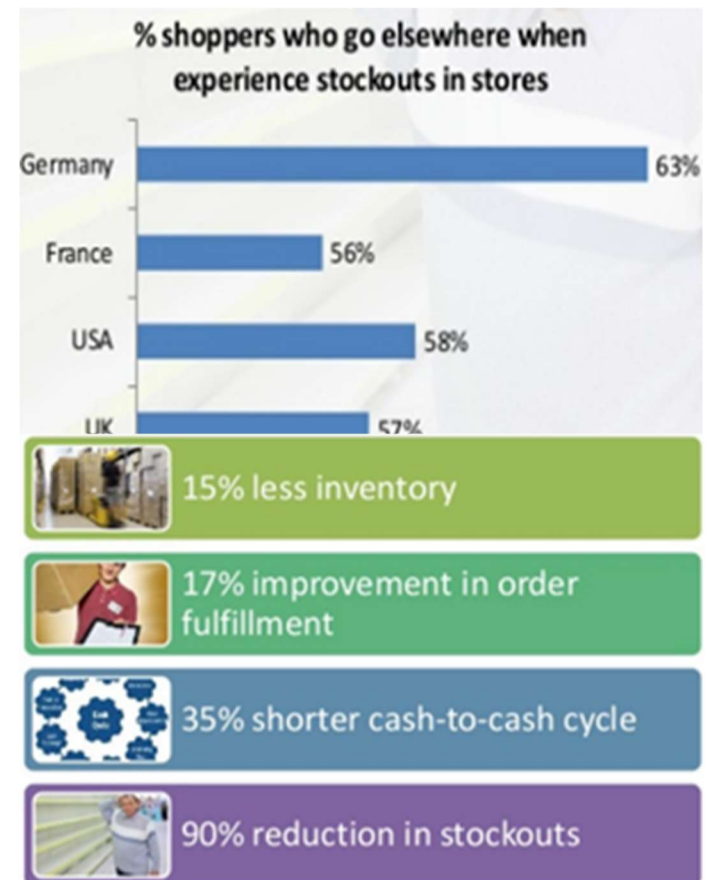


DEMAND Forecasting is the activity of ESTIMATING the quantity of a product or service the CONSUMER MAY purchase. The retail industry has been facing challenges of predicting the DEMAND accurately which results in ENORMOUS loss in revenue.

As per statistical data, retailers loose MORE than 50% CUSTOMERS due to stock out ITEMS. As per Gartner Group and AMR Research, accurate DEMAND forecasting results in MASSIVE AMOUNT of savings to the organizations and results in higher CUSTOMER satisfaction.

DEMAND forecasting traditionally been PERFORMED through statistical techniques like ARIMA, Auto Regression and with recent ADVANCEMENTS in MACHINE/DEEP learning, MORE sophisticated and accurate prediction has been possible.



Algorithm

Time Series

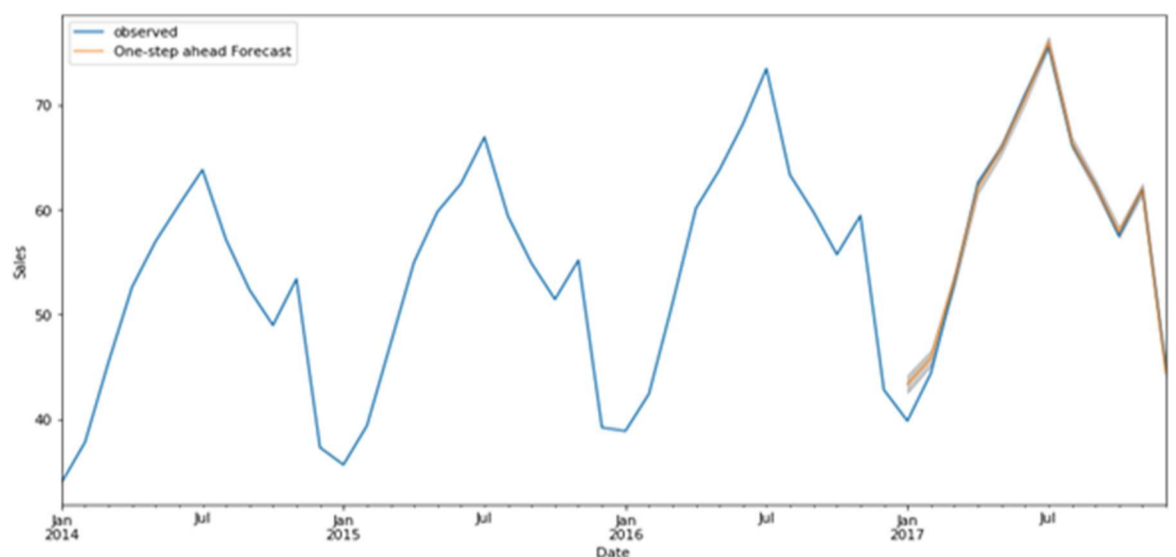
Statistical techniques like Auto Regression, ARIMA has been traditionally used. Facebook released Prophet, their TIME series library in late 2018.

Machine Learning

XG Boost and Light GBM are popular ALGORITHMS for TIME series prediction

Deep Learning

LSTM gives excellent result for TIME series analysis.



Implementation

We present two solutions to DEMAND forecasting

1. Facebook Prophet based TIME series forecasting
2. Machine Learning based forecasting using XG Boost