



Demand forecasting of critical wellhead spares

The volatility of crude oil prices has severely impacted the ability of manufactures and distributors to forecast and plan to meet the volatile demand. The oil and gas industry has seen a demand decline over the last three years till 2017. The challenge for manufacturers is to forecast the demand accurately in spite of the market volatility to drive profitability and optimize inventory. It is especially crucial since some of the products having long lead time for raw material procurement and manufacturing parts.

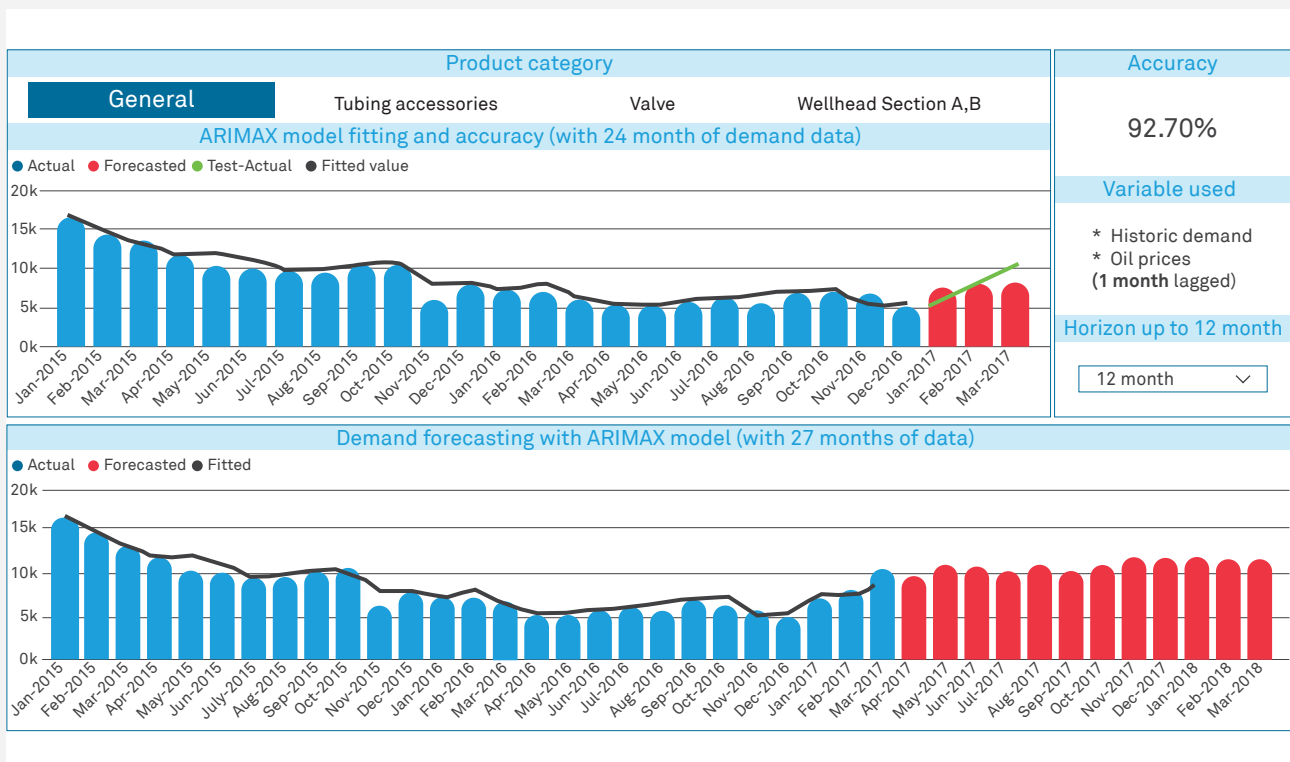
Introduction

Wipro's **Demand Forecasting of Critical Wellhead Spares** app uses historical sales transactions data for the different product lines as well as publicly available data on crude oil prices and rig counts. The app built on Wipro's Data Discovery Platform (DDP) helps supply chain managers to develop accurate demand forecasts to use as input into their procurement, manufacturing, and inventory planning process.

Key takeaways

- This app can be applied across industries to forecast demand for product sales as well as to forecast demand for spare parts used to repair and refurbish the installed base.
- Wipro's Demand Forecasting App is designed to help a manufacturer accurately forecast the demand for spare parts for oil & gas wells in various regions. ABC analysis is performed and C category items are eliminated from the model because the dollar value for their sales made them a low financial risk. The model is therefore focused on critical wellhead spares.

The Demand Forecasting App uses statistical models (time series models) for forecasting the demand based on historical unit sales. It also accounts for external factors such as crude oil prices and number of oil rigs in production to qualify as control variables, based on which the forecast becomes more appropriate and precise. The model is validated against a 3 month hold out sample and forecast accuracy ranging from 83% to 93% is achieved depending on the product group.



The demand model generates unit demand forecasts for 4 major product groups. The end users can set the forecast horizon for up to 12 months into the future. The example shown on the page is the forecast for Wellhead sections up to 6 months out.

Key benefits

The app gives insight into the drivers of demand for product categories such as valves, tubes, wellhead sections and general categories. It enables the comparison of demand between the two regions.

An accurate demand forecast offers several operational benefits such as:



Minimizes the cost of inventory to meet customer demand



Maximizes the revenue opportunity by forecasting a business turnaround



Improves sales readiness and sales planning to take advantage of the business turnaround

Wipro's Data Discovery Platform (DDP)

DDP is an integrated platform that captures and manages data to generate pertinent insights through advanced analytics, offering price, performance and time benefits. It accelerates 'time-to-insight' for an enterprise using pre-built industry apps that enable faster decision making, aided by advanced visualization.





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