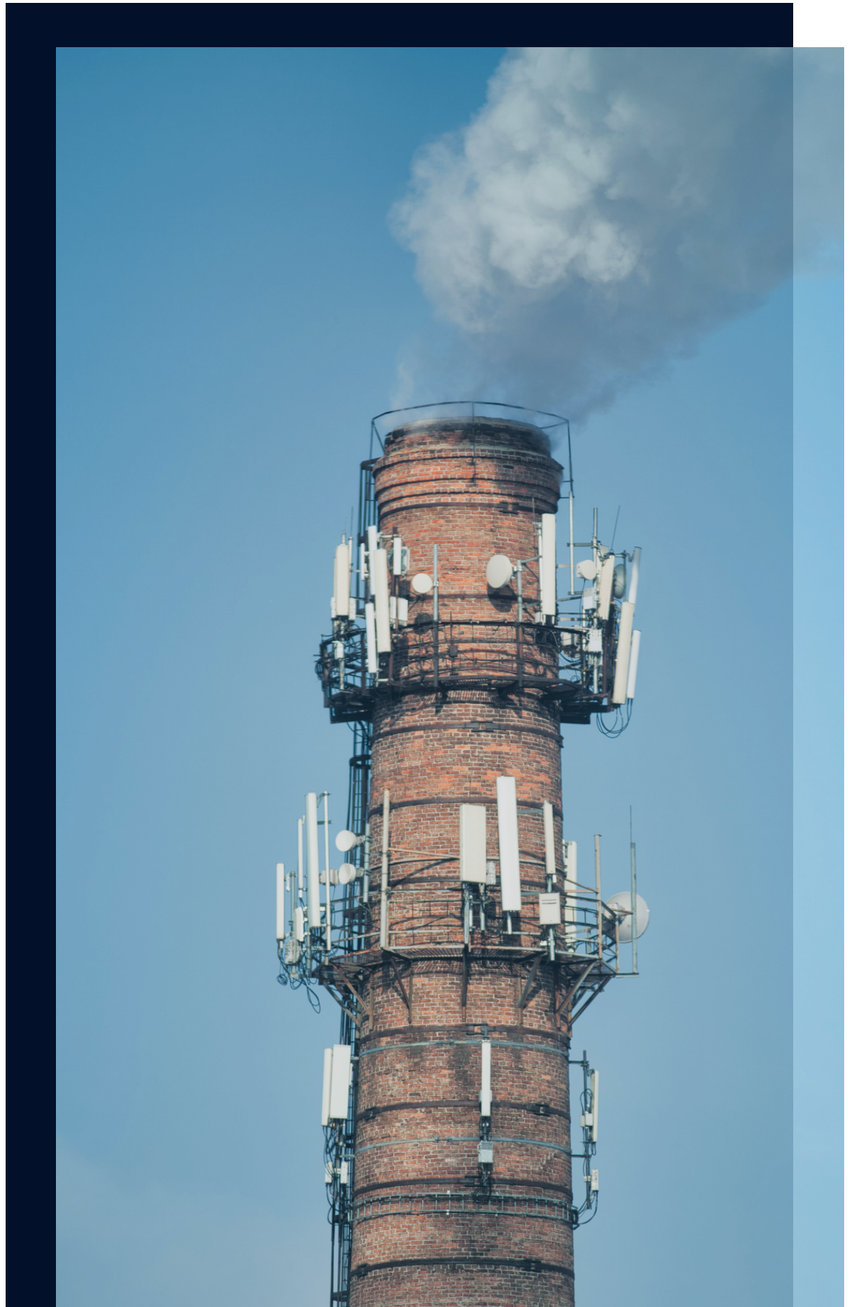
Case Study

How a company in the tier-1 automotive sector improved their forecasting process and accuracy by 56%

indicio



Difficulty forecasting their market share

As a tier-1 supplier in the chemical industry, one of the main markets they served was the automotive industry.

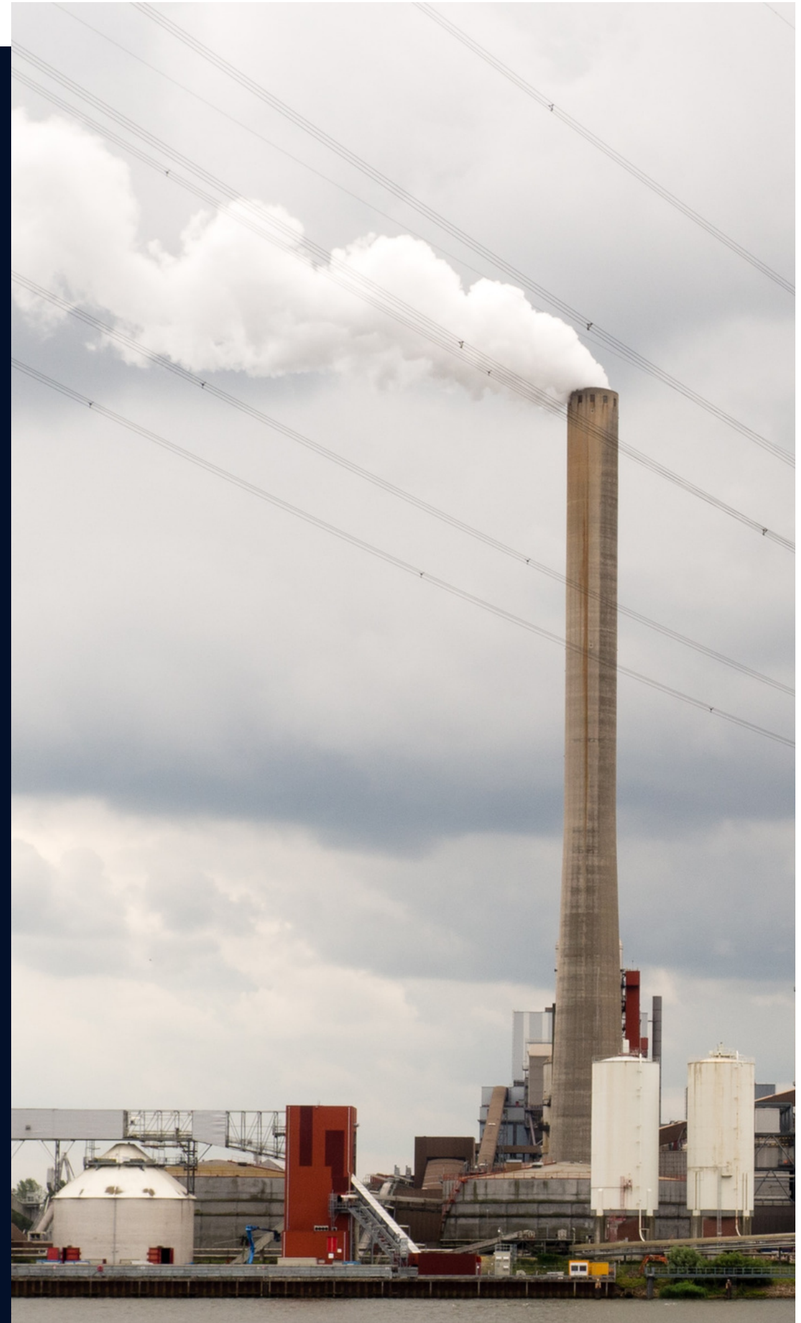
They needed to predict the future demands of their market. By getting insight into the sales volumes and drivers, they would be more equipped to guide their market strategies.

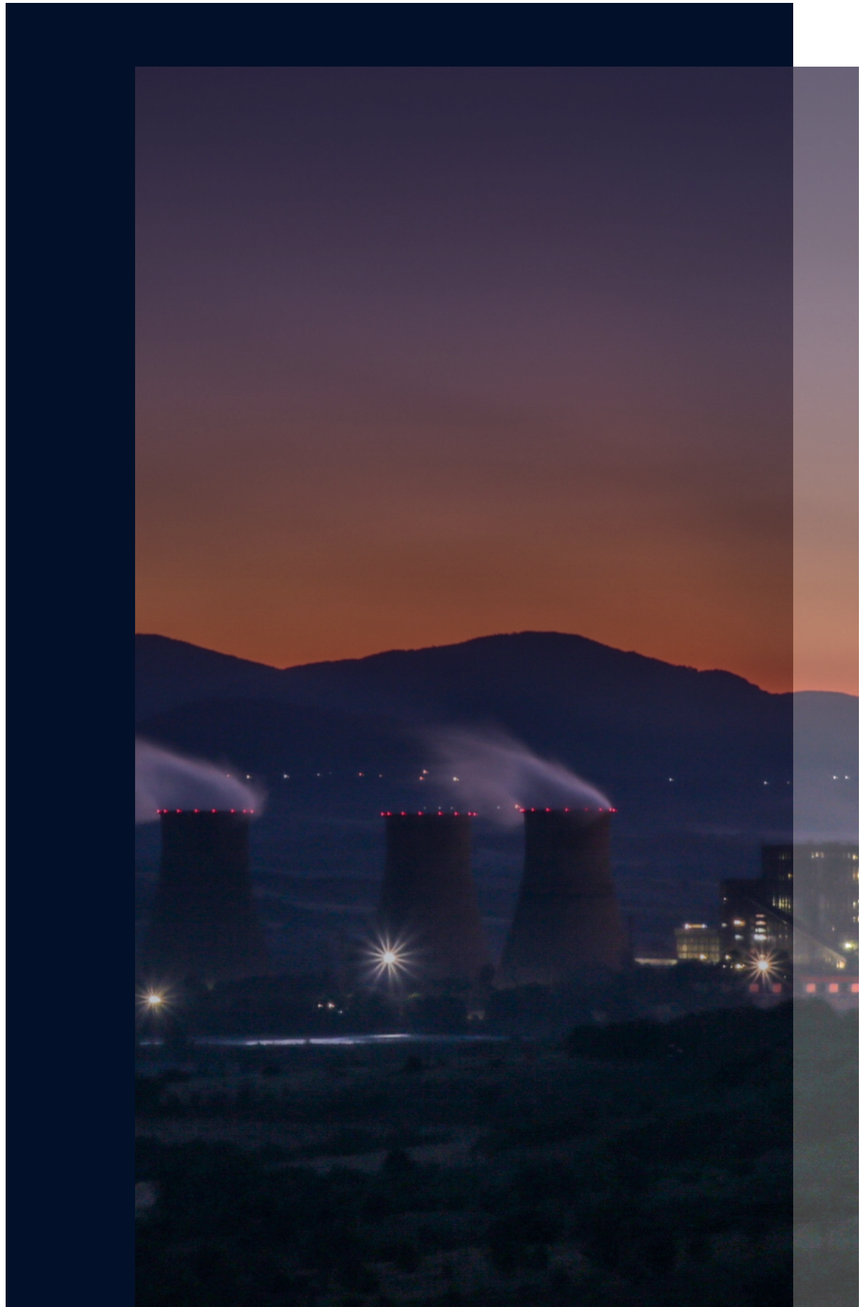
This was also necessary to help them uncover key demand drivers by industry and region at a quicker pace to stay competitive.

Inability to allocate resources efficiently due to little clarity over market shifts

They were not being able to forecast demand accurately which meant there was an inability to respond to its demand fluctuation,and accurately predict supply on time

The lack of clarity over the impact of external macroeconomic factors meant that they did not have full visibility over resource allocation. This led to unnecessary costs and potential lost revenue.

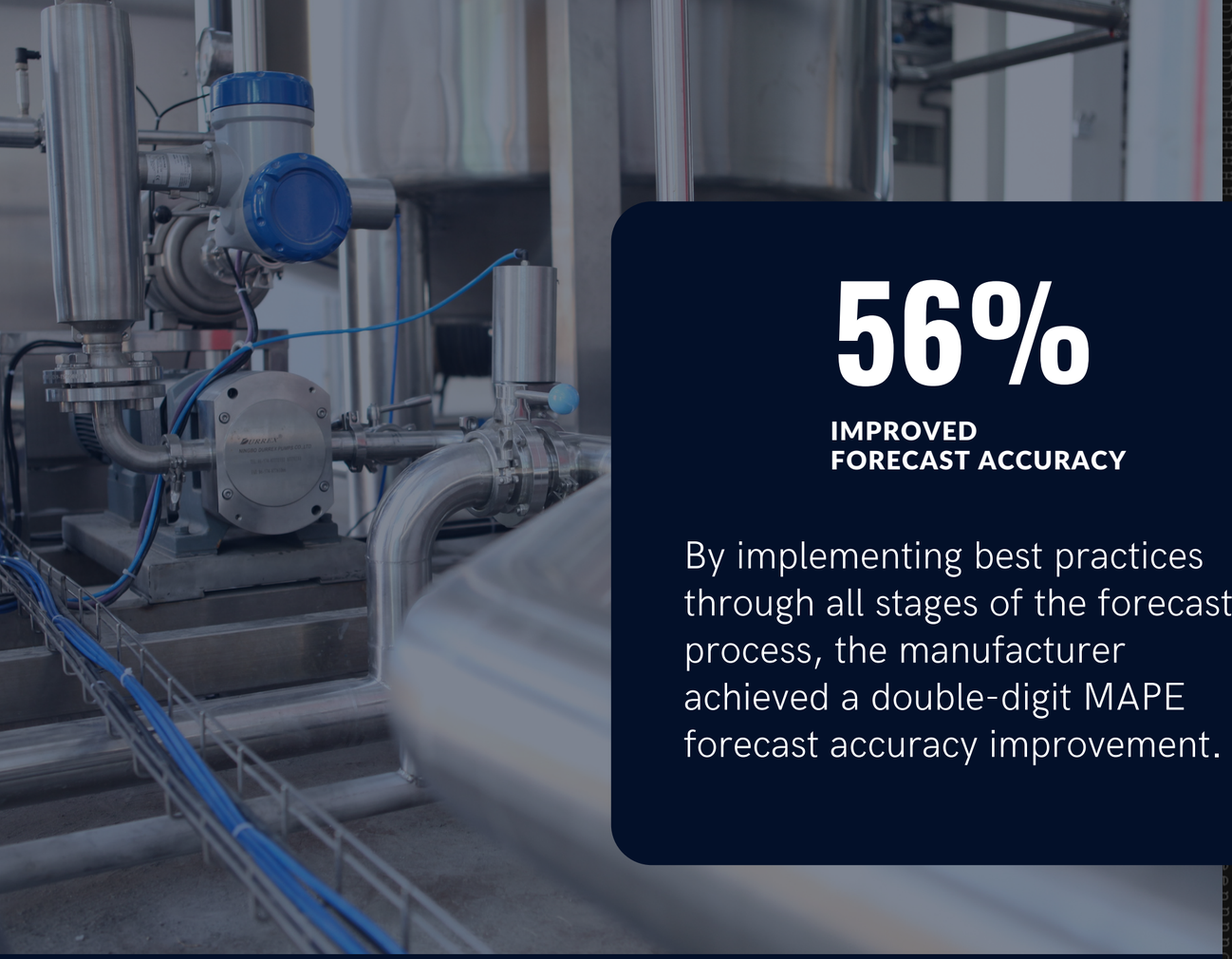




They needed to identify their leading indicators in order to detect market trend shifts

They had sufficient data which meant that they were a prime candidate to apply multivariate models to their forecasting. However, they were currently using a bottom-up approach, which limited them to using simple univariate forecasting modes.

This not only impacted forecasting accuracy, but it also meant that they were missing out on the opportunity to apply leading indicators to their aggregated forecast as univariate forecasting models do not allow for that.



56%

IMPROVED FORECAST ACCURACY

By implementing best practices through all stages of the forecast process, the manufacturer achieved a double-digit MAPE forecast accuracy improvement.

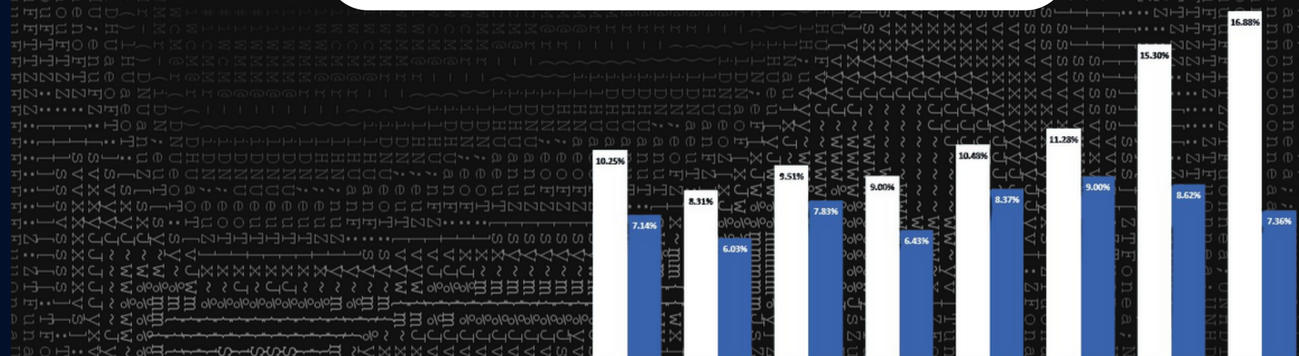
IMPROVEMENT IN ACCURACY

18-56%

AT

2-11 months

TIME HORIZON



Key results

OVERVIEW OF MARKET DRIVERS AT BOTH LEVELS

Industry + Region

The organization was now able to create forecasts easily for each product group and region.

With the models built, it simply requires a quick update monthly, making the process repeatable, saving valuable time.

ABILITY TO TRACK MARKET SHIFTS AT A HIGHER FREQUENCY

Visibility into the changing relevancy of the organization's leading indicators, which gave them a clearer picture of which inputs to consider.

How was it done?

01 Identified their seasonal patterns

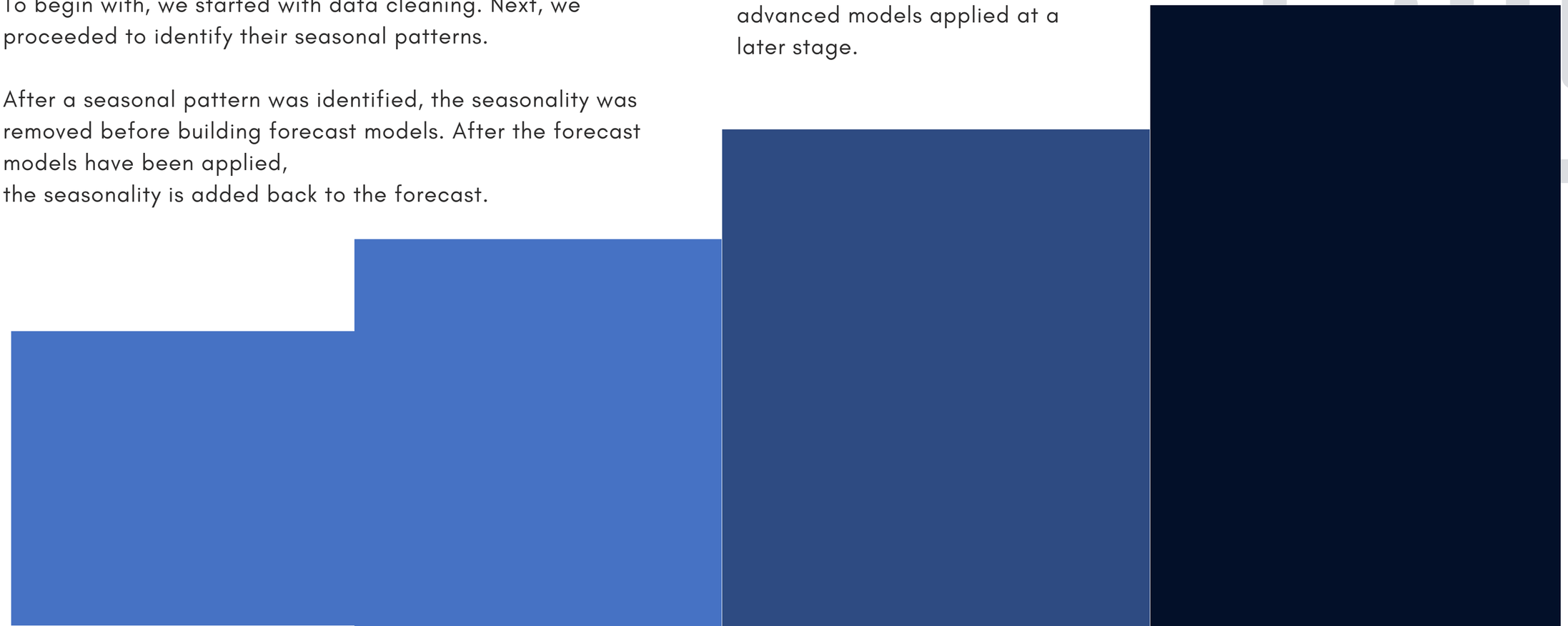
To begin with, we started with data cleaning. Next, we proceeded to identify their seasonal patterns.

After a seasonal pattern was identified, the seasonality was removed before building forecast models. After the forecast models have been applied,
the seasonality is added back to the forecast.

02 Built benchmark forecasts

Initially, Indicio built several univariate models that were based solely on historical sales.

This acted as a first benchmark to judge the quality of the more advanced models applied at a later stage.



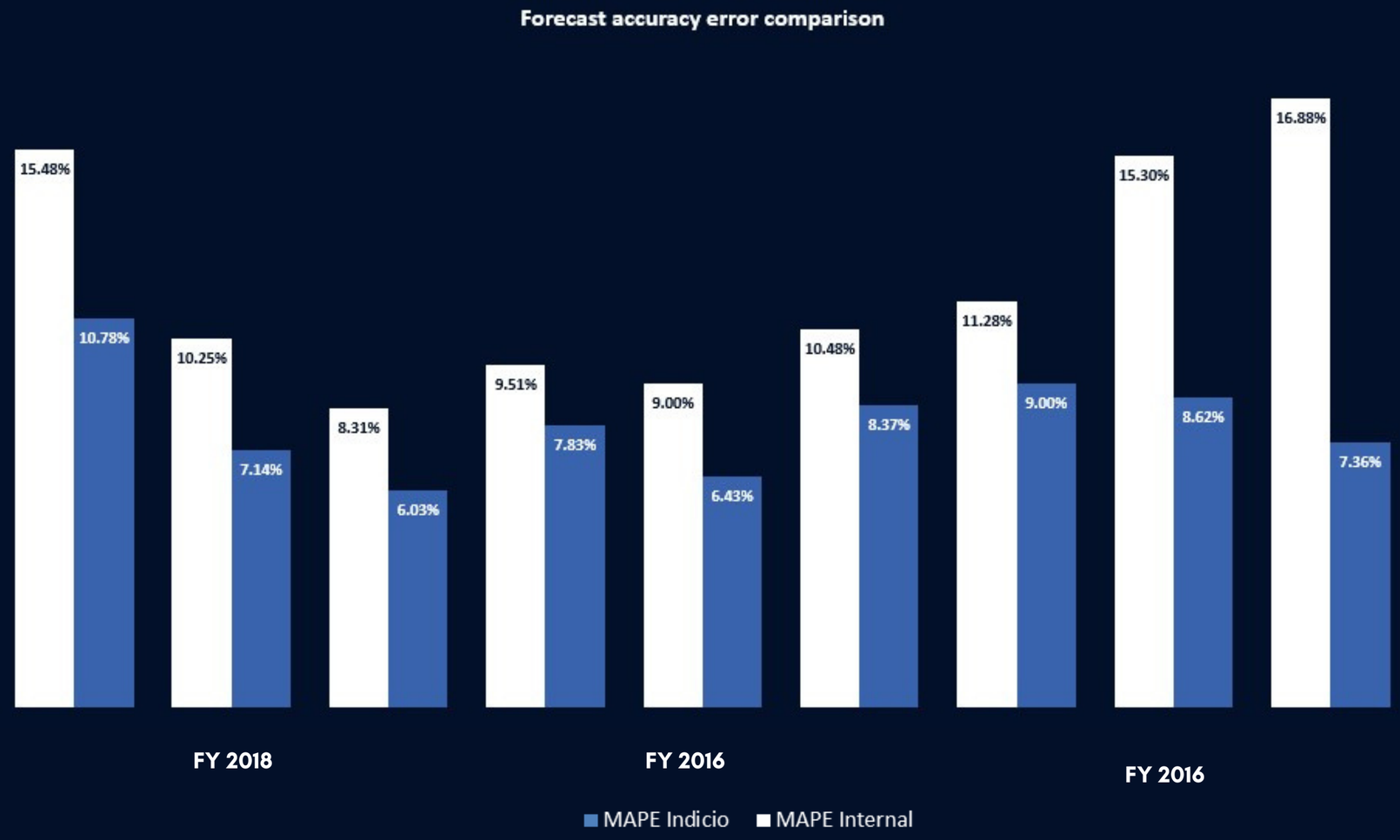
Increase in forecast accuracy

+ 56%

Mean accuracy percentage error

7.96%
Indicio accuracy error

11.69%
Internal accuracy error



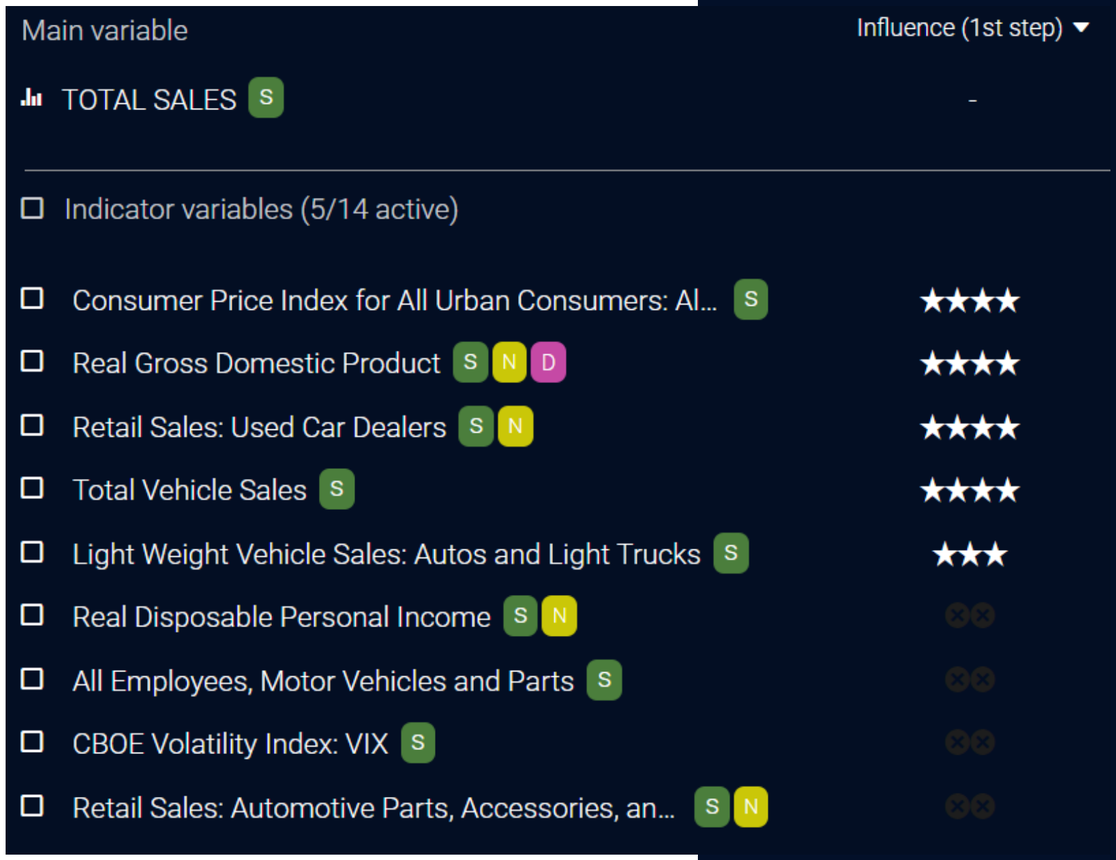
03

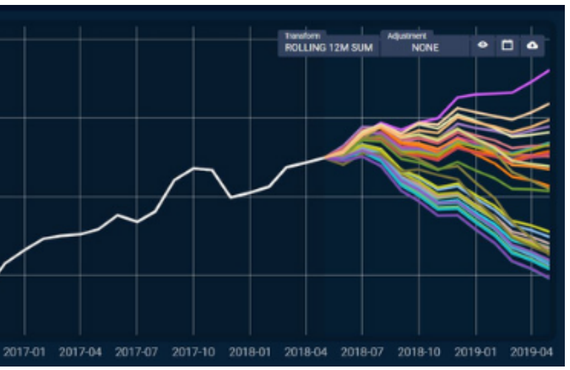
Identified their specific leading indicators

Using a VAR model with Lasso penalty, the models tested for all the potential combinations of indicators that are determined as most valuable towards predicting future sales.

These were the most relevant leading indicators identified to best forecast the demand for their chemicals products.

Key leading indicators identified





04 Built multivariate forecasts

After the relevant leading indicators had been identified, we applied multivariate forecast models on the indicators identified to forecast their data.

When the indicators were identified, multivariate forecast models were applied on the indicators identified to forecast their data. This was followed by weighting a large number of econometric forecast models according to accuracy.

05
Weighted all models according to accuracy

Some models are better than others at short,
mid and long horizons. Indicio combines all models into one forecast, giving more weight to the best performing models at each step.

The manufacturer’s forecast did not apply any forecast models while Indicio's forecast applied 50+ of the latest econometric models, and weighted them into one optimal forecast.

Why not just one good model?

All forecast models have their advantages. By weighting a large set of models, we capture the strengths of each individual models. According to the latest forecast research, this has been proven to be more accurate.

Ready to get started?

Contact us today and find out
how much you can improve your forecast accuracy.

Book a demo

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