indicio

Case Study

# How a chemical manufacturer increased their market forecast accuracy by 42%

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# CHALLENGES

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

With a branch in this manufacturer serving the consumer goods market, they needed to get insight into the textile production volumes and export numbers to determine the key drivers that would impact and guide their market strategies.

The lack of clarity over the impact of external macroeconomic factors meant that they did not have early warnings of upcoming market trend shifts. This led to large forecast deviations when market trend shifts occurred.

Within the chemical industry, there are a number of end products that drive demand. Indicio enabled the company to identify the specific leading indicators of each end segment resulting in accurate forecasts of aggregated demand.

## 02 Inability to identify leading indicators

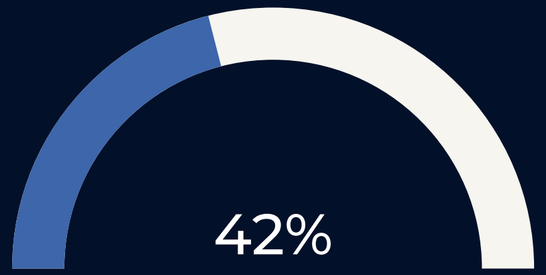
They had sufficient data which meant that they were a prime candidate to apply multivariate models to their forecasting. However, they were currently using a bottom-up approach, which limited them to using simple univariate forecasting modes.

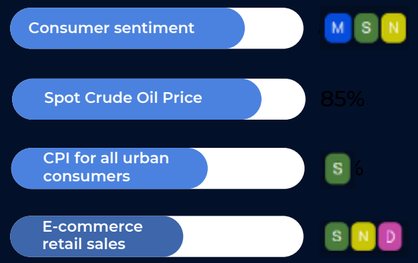
They had been trying to add the market view to their univariate forecasts by taking into consideration forecasts from the sales reps and using macroeconomic data as KPI:s for adjusting the forecast on the aggregate level.

They found the sales forecast to be prone to bias and when using the KPI´s, they had a hard time deciding which KPIs to follow as they were often contradicting each other.

With Indicio, they were able to identify the leading indicators actually driving their data and then obtaining an accurate forecast based on the leading indicators identified.

# Key results




## 42% forecast accuracy improvement

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

## Identified predictive market drivers

After identifying their leading indicators and demand, they could now able to able to factor in the economic developments and business cycle impacting the specific product group.

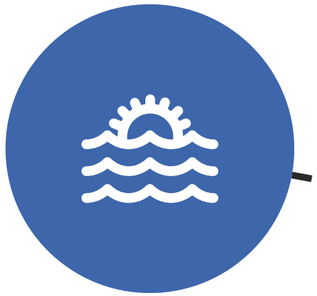
This meant that they could get visibility over the significance of each indicator and an overview of their impact on their business projections.

## Overview of their market drivers at an industry and region level

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

Identifed their leading indicators and demand more accurately, and get visibility over the significance of each indicator.

# HOW WAS THIS 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.

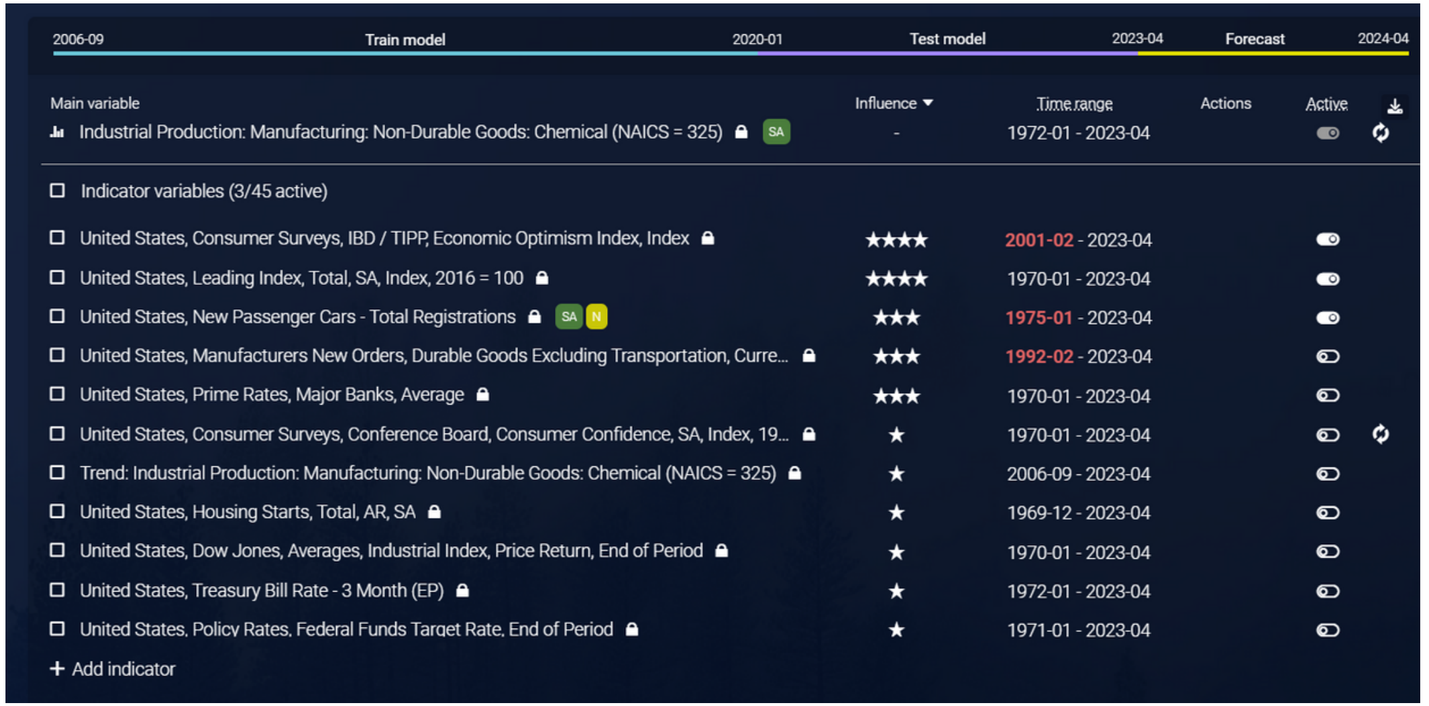
This acted as a first benchmark to judge the quality of the more advanced models applied at a later stage.

## 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.

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.

## 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.

# 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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