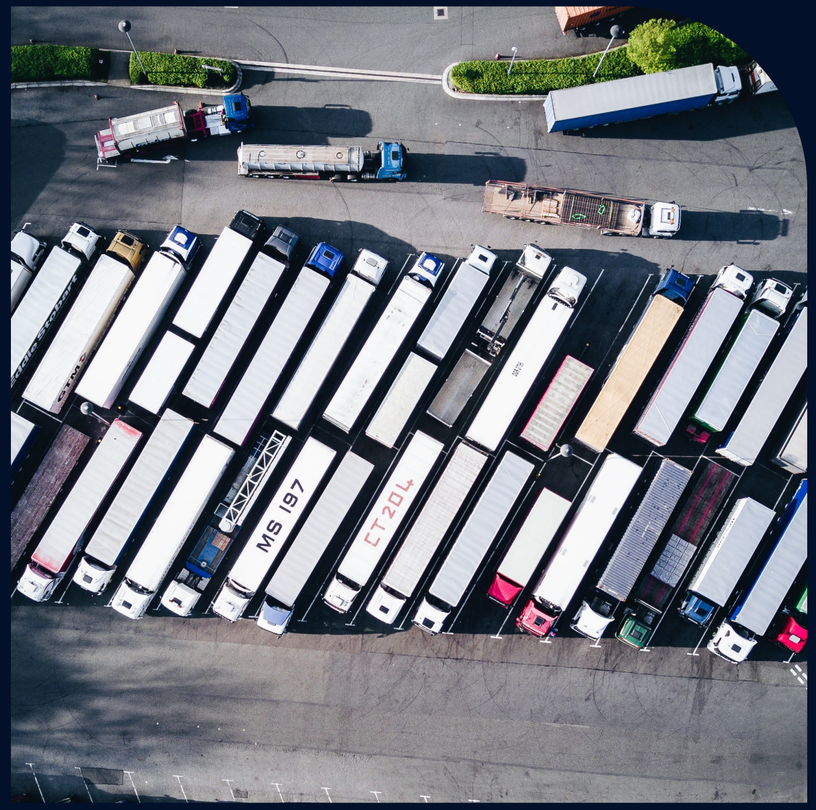


Case Study

How a market leader in the heavy duty truck industry improved forecast accuracy by 57%

Read now

indicio

CHALLENGES

As a market leader in the heavy duty truck industry, serving well over 100 international markets, the manufacturer was interested in forecasting heavy truck sales (over 6 tons) in Europe in order to optimize production capacity to meet market trend shifts.

To do so, they required accurate forecasts of their aggregated sales volumes. However, this was not the case.

Their Excel-based forecasting methodology resulted in low forecast accuracy and an inability to detect trend shifts. This subsequently hindered them from optimizing capacity planning.

WHAT THE MANUFACTURER WANTED TO ACHIEVE

01

Improve forecast accuracy.

02

Align the forecasting process globally.

03

Adapt production capacity efficiently to meet market turns and shifts.

Increase in forecast accuracy

+ 57.7%

Mean accuracy percentage error (MAPE)

3.43%
Indicio accuracy error

8.11%
Internal accuracy error

RESULTS

Improved forecast accuracy

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

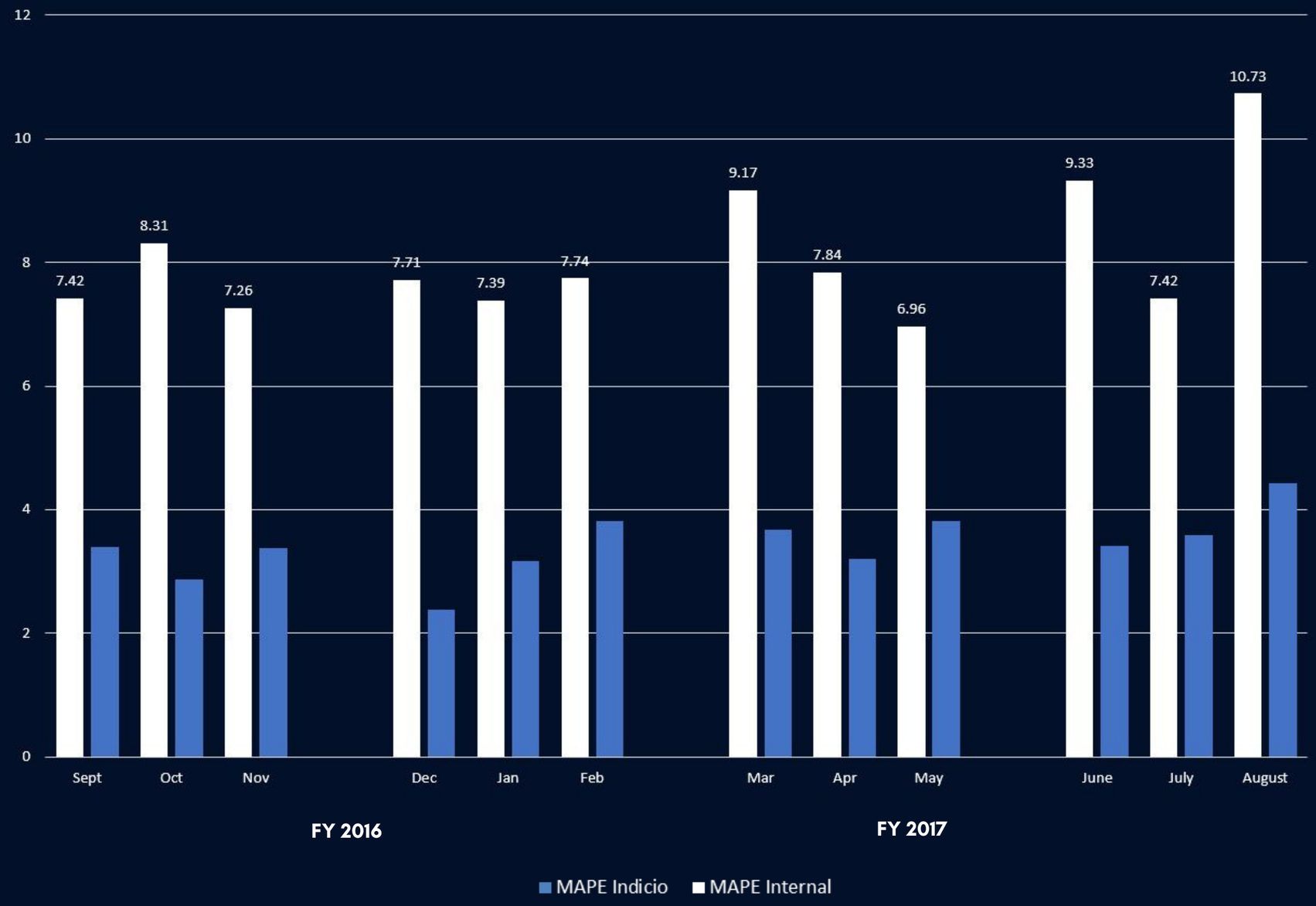
Gained the ability to detect market shifts

With Indicio, they were able to detect trend shifts on the market 1-2 months earlier than before. This gave the manufacturer enough time to adjust production before a trend shift, resulting in significant savings when the market went down and the ability to meet demand when the market went up.

Aligned forecasting globally

Successfully established a structured process across all markets and ease of sharing forecasts ensured that they worked in the same way, and enabled them to share information seamlessly.

A SNAPSHOT OF THE ACCURACY IMPROVEMENT



**These figures represent the MAPE of the 12-month ahead forecast.*

Overall MAPE Indicio: 3.43%
Overall MAPE Internal: 8.11%
Reduction: -57.72%

HOW WAS THIS DONE?

Identified the manufacturer's seasonal patterns

Built benchmark forecasts

Identified the manufacturer-specific leading indicators

Built multivariate forecasts

Weighted all models according to accuracy

IDENTIFIED THEIR SEASONAL PATTERNS

To begin with, we started with data cleaning.
Next, we proceeded to identify the company's seasonal patterns.

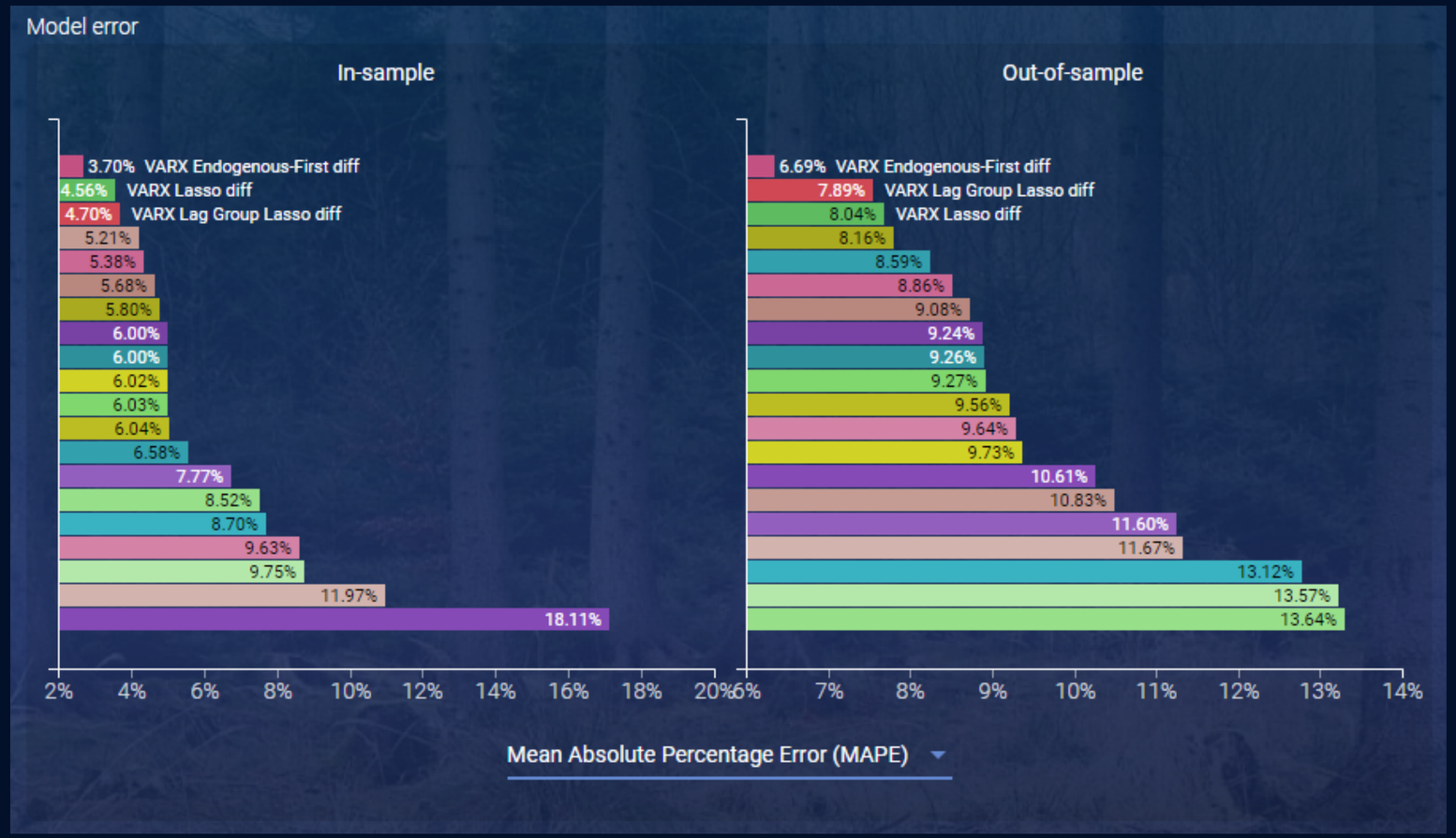
We detected a seasonal pattern in their sales data. Sales tend to be low in January before slowly increasing during Spring, to reach the first peak in May.

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

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.



** These figures do not represent actual company data due to confidentiality reasons.*

IDENTIFIED THE MANUFACTURER-SPECIFIC LEADING INDICATORS

**These figures do not represent actual company data due to confidentiality reasons.*

Historically, the manufacturer was identifying leading indicators through correlations identified in Excel. The problem was that many of the indicators identified did not have a causal effect on the main variable.

Indicio uses a Lasso model to test for all the potential combinations of indicators that are determined as most valuable towards predicting future sales, and suggests the optimal group of indicators to use as a basis for forecasting.

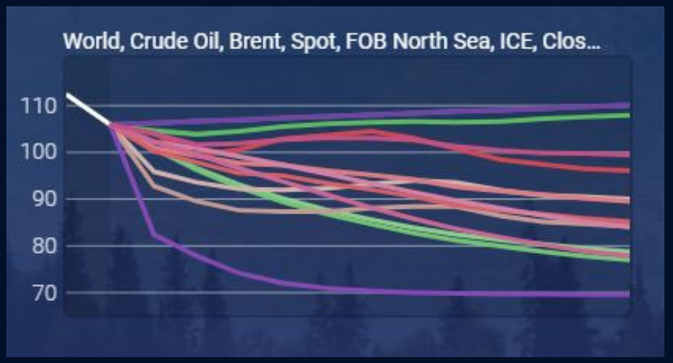
>> **[Learn more about how this is done]**

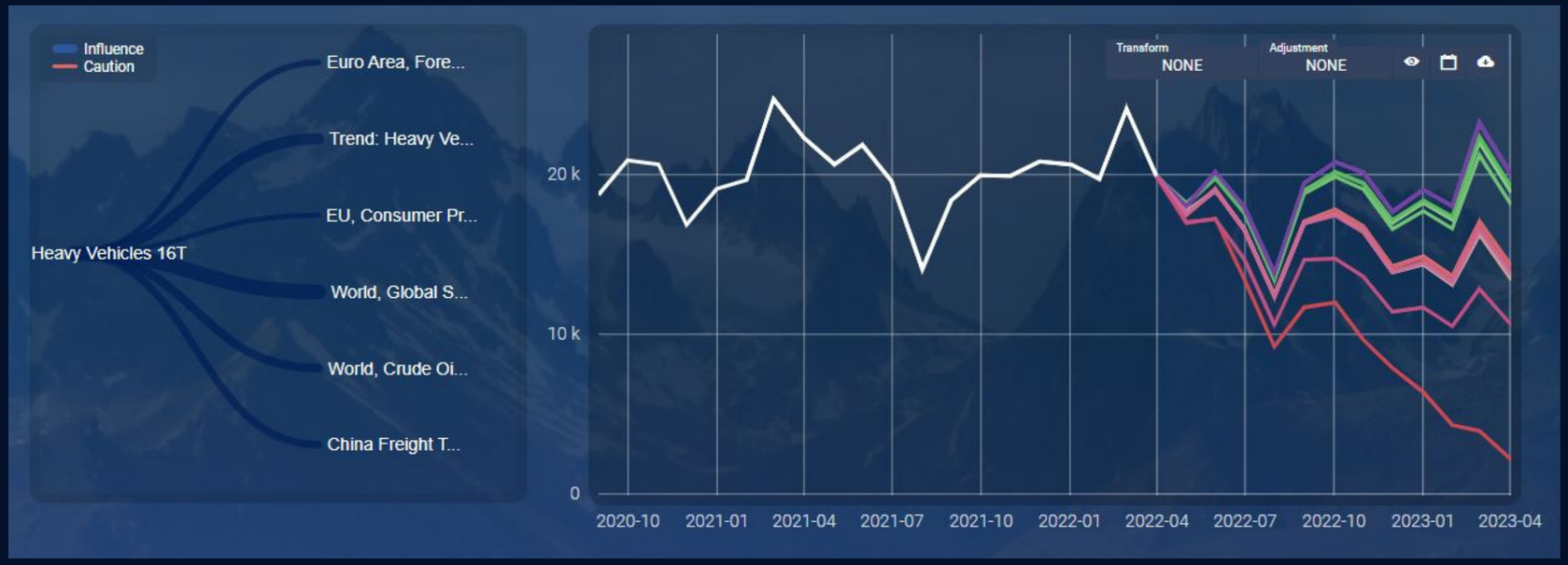
In the analysis, they found that the combination of these indicators *(seen in the left diagram)* had the highest impact on aggregated sales.

BUILT MULTIVARIATE FORECASTS

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

Indicio applied a large number of econometric forecast models and weighted them according to accuracy.





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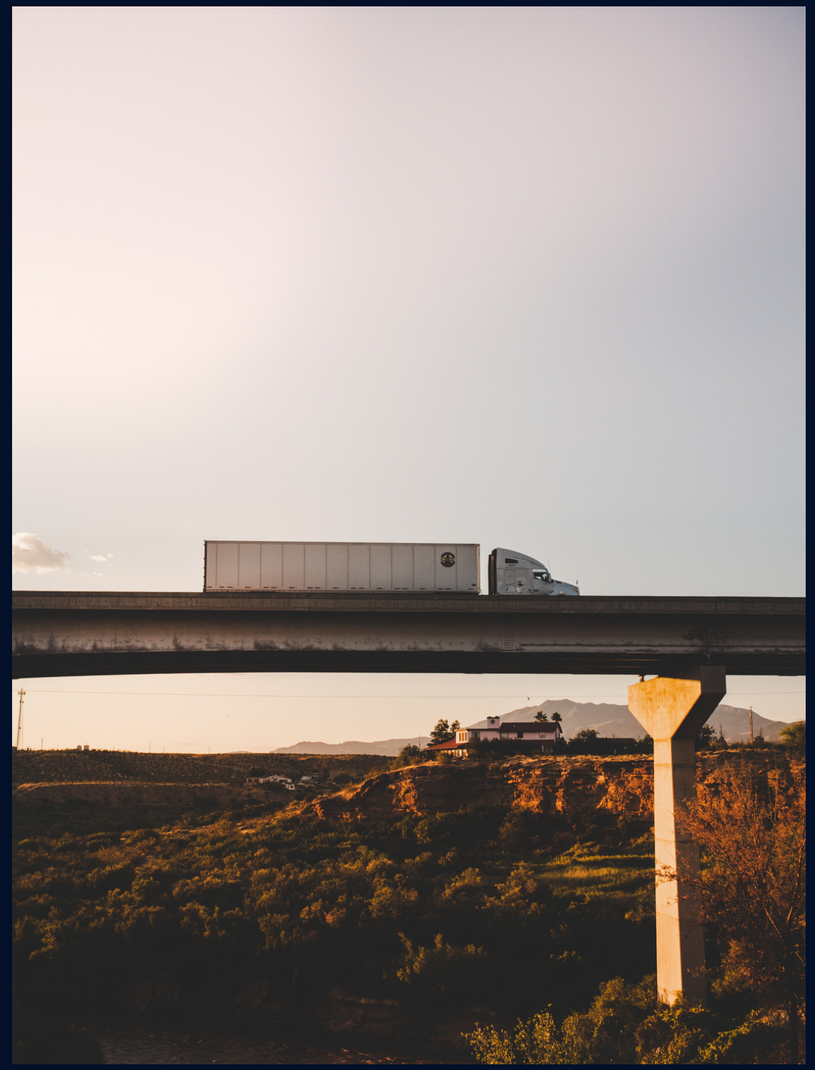
Why not just one good model?

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

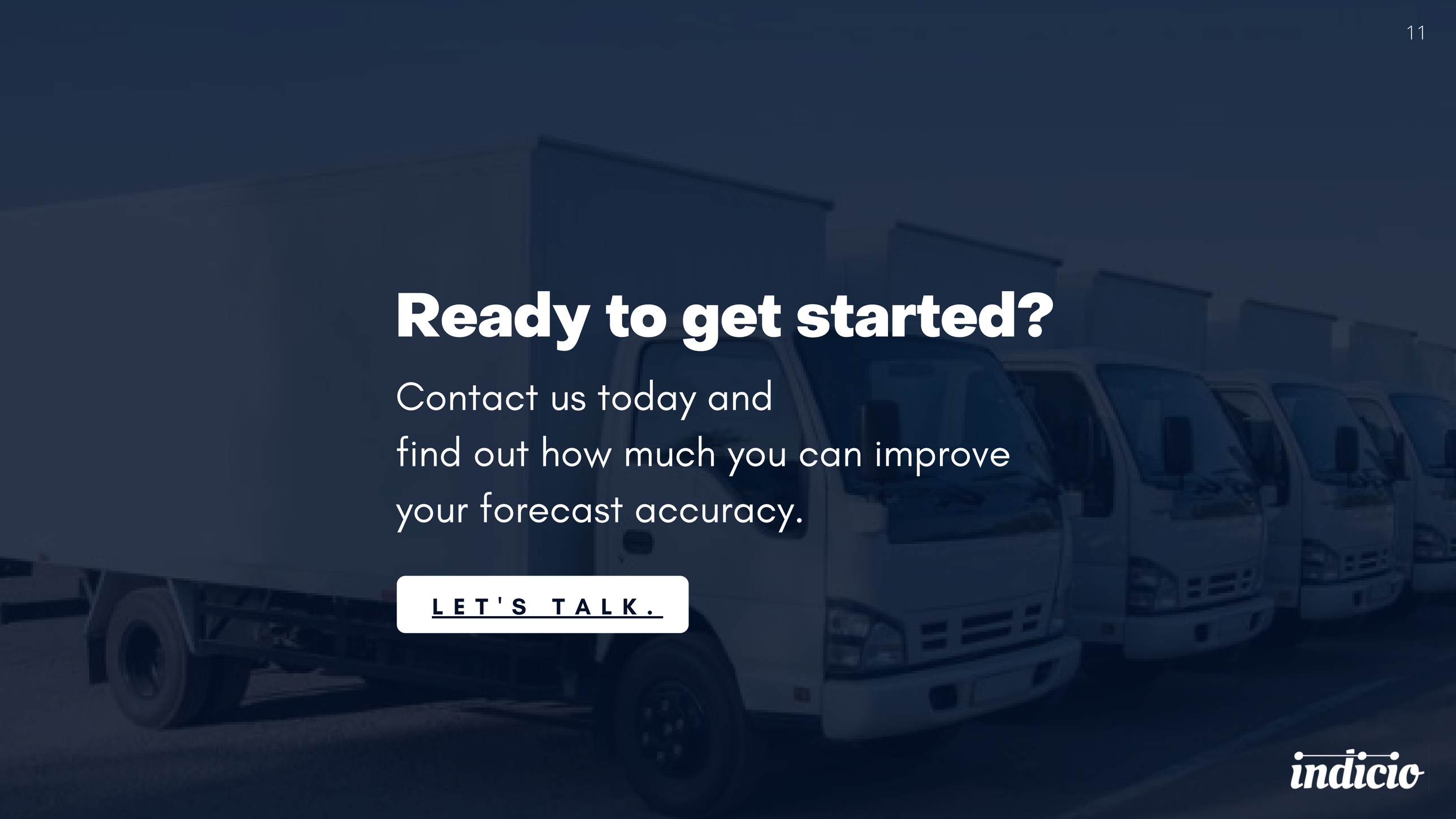
Read more about the platform.



WEIGHT ALL MODELS ACCORDING TO ACCURACY

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

The manufacturer’s forecasting methodology did not apply any forecast models while Indicio's methodology 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.

LET'S TALK.

indicio