

VAILLANT GROUP

Dr. Jan Daugart | 21.01.2026

from GUT FEELING to PREDICTABILITY

how AI can revolutionize sales forecasting

TAKING CARE
OF A BETTER CLIMATE

INSIDE EACH HOME
AND THE WORLD AROUND IT



WHAT IF we could use AI to predict the future

... and get our

FORECAST DONE

AUTOMATICALLY

with only some clicks?

What is predictive forecasting?

AI-based algorithms

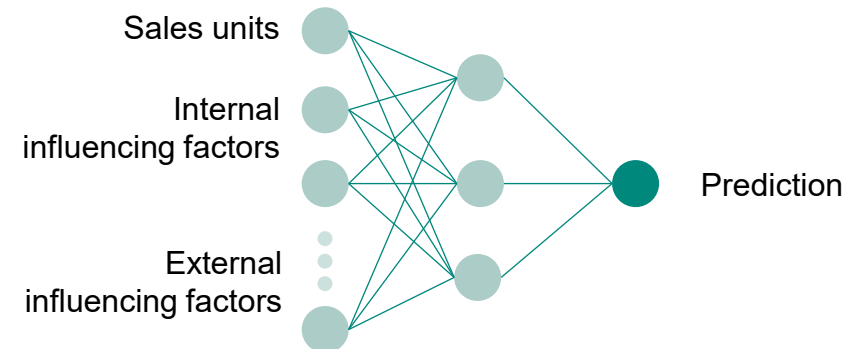
detect patterns in historical data

and apply them to forecast future outcomes

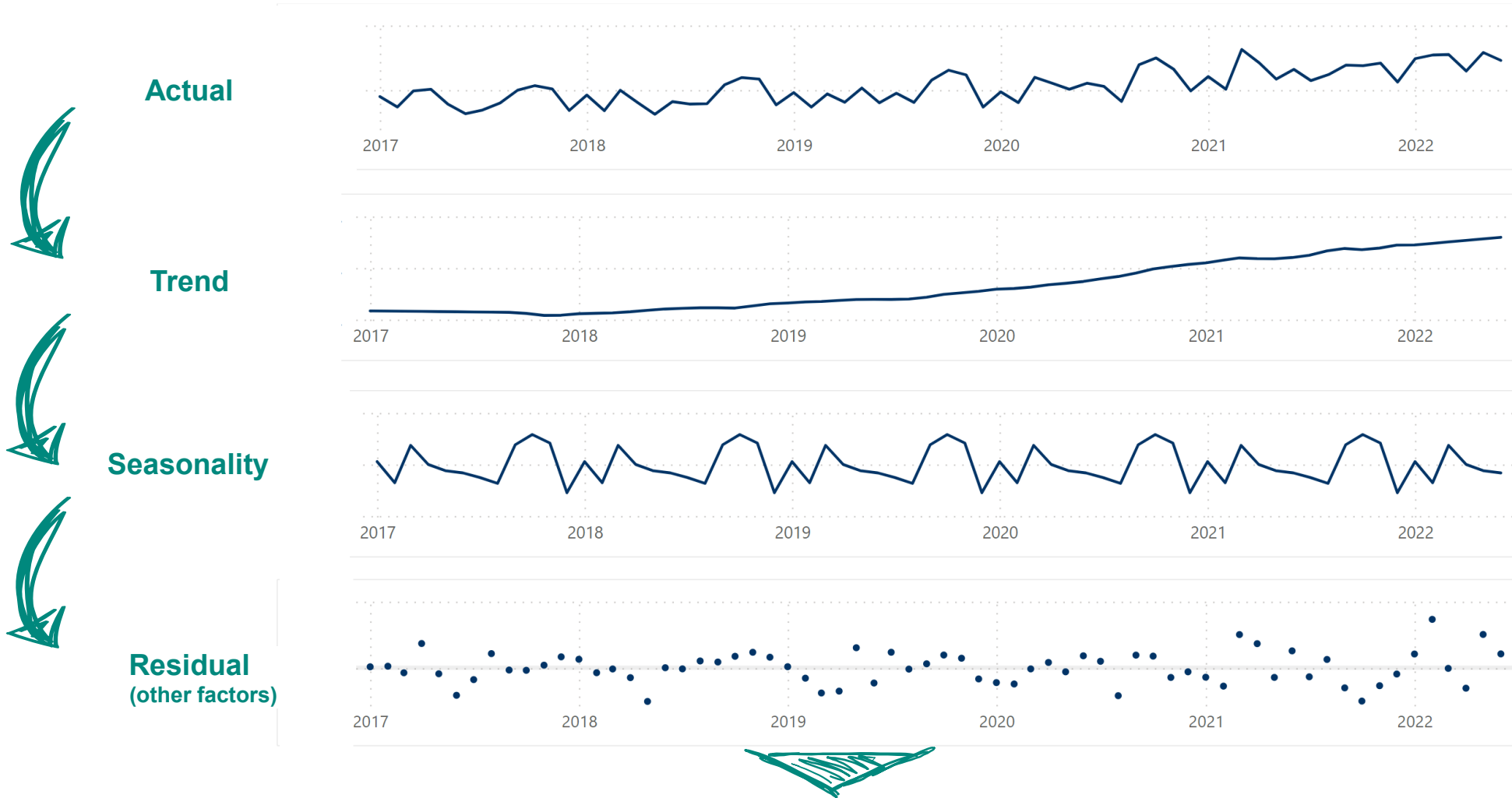
Univariate models = **one input** (e.g. sales units)



Multivariate models = **many inputs**
(incl. influencing factors like, pricing, market data, etc.)



How does it work?



What does it need?

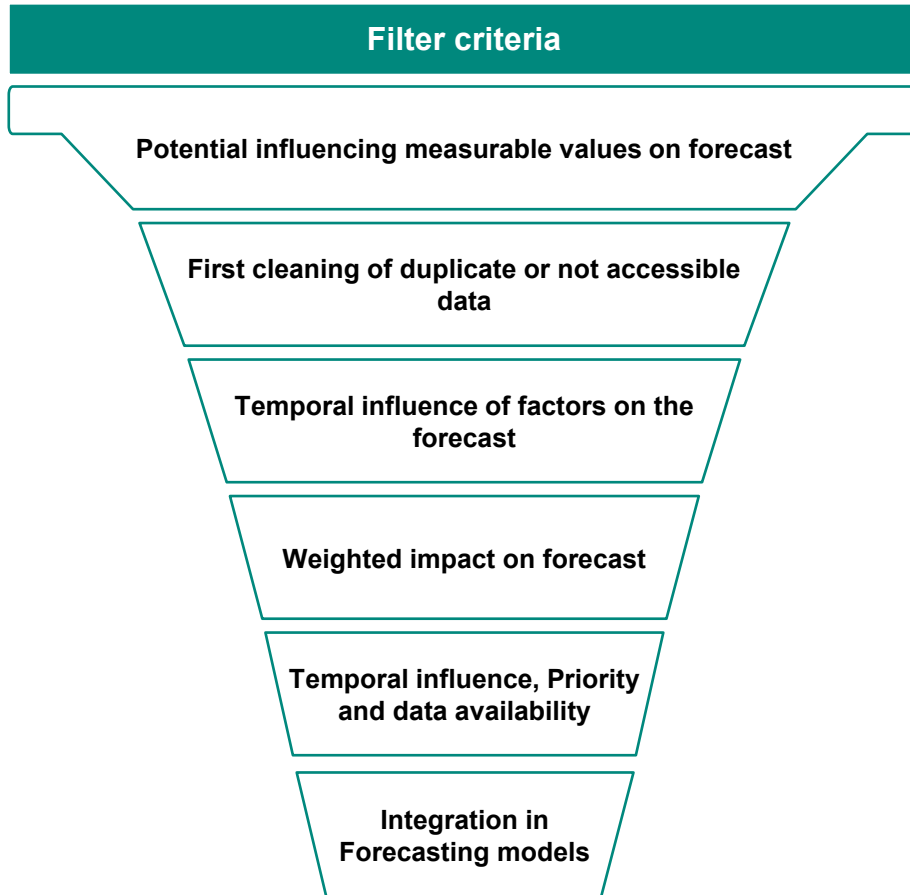
DATA



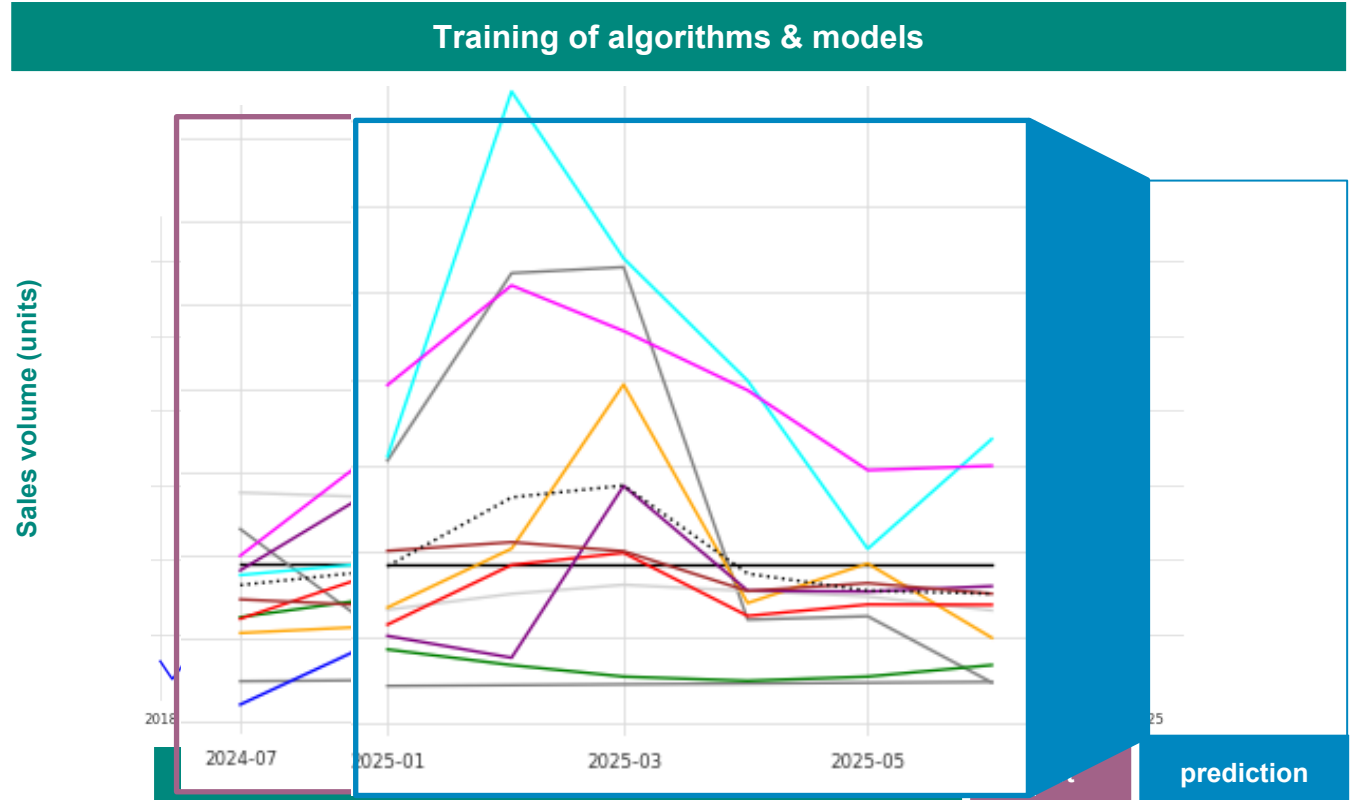
Training
Models & Algorithms
Prediction

Data selection and training of algorithms and models

DATA DATA DATA DATA DATA



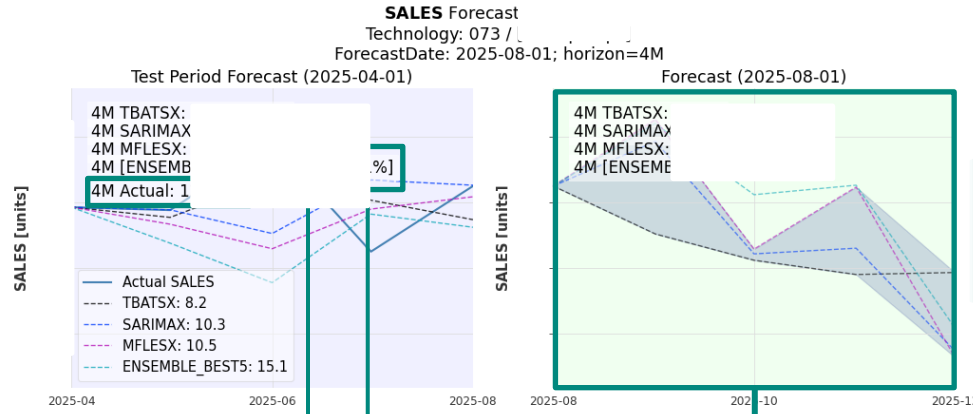
DATA



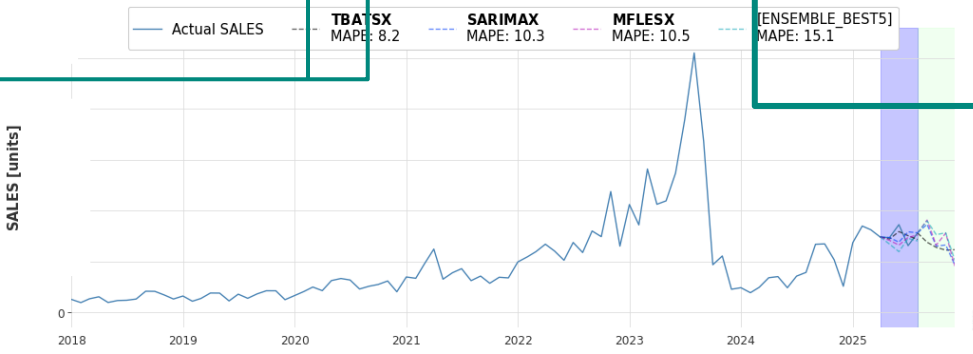
Forecast Accuracy Ratio (FAR*) used to measure models' performance.

A lot of Groundwork is necessary

**Prediction +
Backtest 4 months
with actual Sales
Volume**



**Prediction 4 months
without actual Sales
Volume**

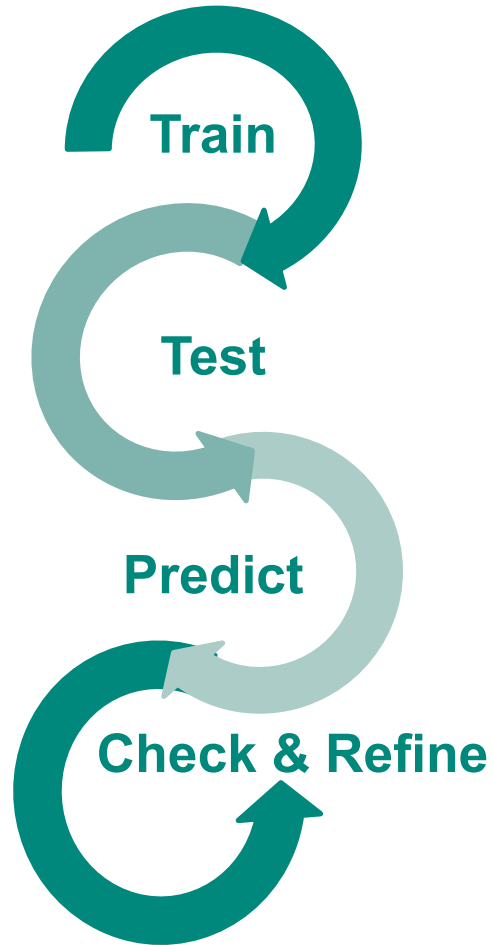


**Deviation from the
total actual units over
horizon period**

**whole timeseries from year 2018
onwards**

**Best 3 single Models +
ENSEMBLE (best 5 models
averaged as a reference)**

DOs & DON'Ts



DO	DON'T
<ul style="list-style-type: none">▶ Understand your business and business drivers▶ Set-up data in a structured way that can easily be maintained / updated (at least ~ 60 data points)▶ Eventually clean-up special effects	<ul style="list-style-type: none">▶ ...use too few data points (at least interpolate)▶ ... take too many external factors▶ ...use black box algorithms (e.g. available in planning tools) only
<ul style="list-style-type: none">▶ Define clear test rules & performance KPIs▶ Check correlation vs. causation and lead and lag	<ul style="list-style-type: none">▶ ... over train / over fit
<ul style="list-style-type: none">▶ Use several models / algorithms	<ul style="list-style-type: none">▶ ... see outcome of different models as a corridor▶ ... stick always to one model
<ul style="list-style-type: none">▶ Refine models in defined periods▶ Verify your business drivers and model	<ul style="list-style-type: none">▶ Don't stop: this is an ongoing effort it's not over after the first implementation
<ul style="list-style-type: none">▶ Train people and manage expectations early▶ Set up a play book to document the todos and learnings, keep optimizing▶ Set up a clear Target Operating Model (TOM)	<ul style="list-style-type: none">▶ Don't promise too much, this is a learning journey; AI does not happen magically

Possible Operating Models of a Predictive Forecast Solution

SUPPORT (Level I)

Prediction used as support for bottom-up

- ▶ Parallel run of prediction
- ▶ Prediction used to help forecasting
if uncertainty very high or predictability very high
- ▶ Pilot / learning phase to validate status of development and prepare for next level

CHALLENGE (Level II)

Prediction sets a benchmark

- ▶ Prediction runs first
- ▶ Prediction sets benchmark or “targets”
- ▶ Stricter implementation in processes and tools

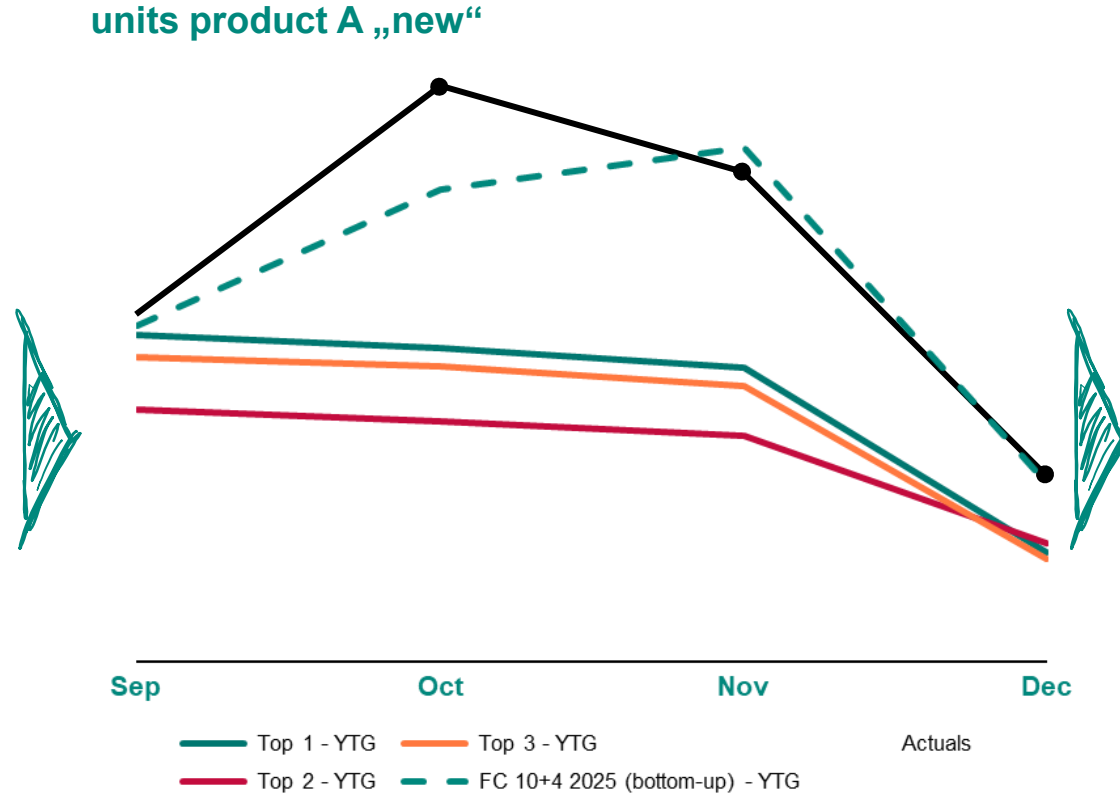
REPLACE (Level III)

Prediction replaces bottom-up forecasts

- ▶ Prediction replaces bottom-up (where reasonable)
- ▶ Clear responsibilities, rules and organizational structures needed (e.g. right to “overwrite”)
- ▶ Forecast run is always on

Does it work?

- ▶ Univariate models
- ▶ Training Data 2018-04/2025
- ▶ Test data 05-08/2025
- ▶ Best 3 Models (~90% Forecast Accuracy "FAR")
- ▶ Bottom-up Forecast "10+4"



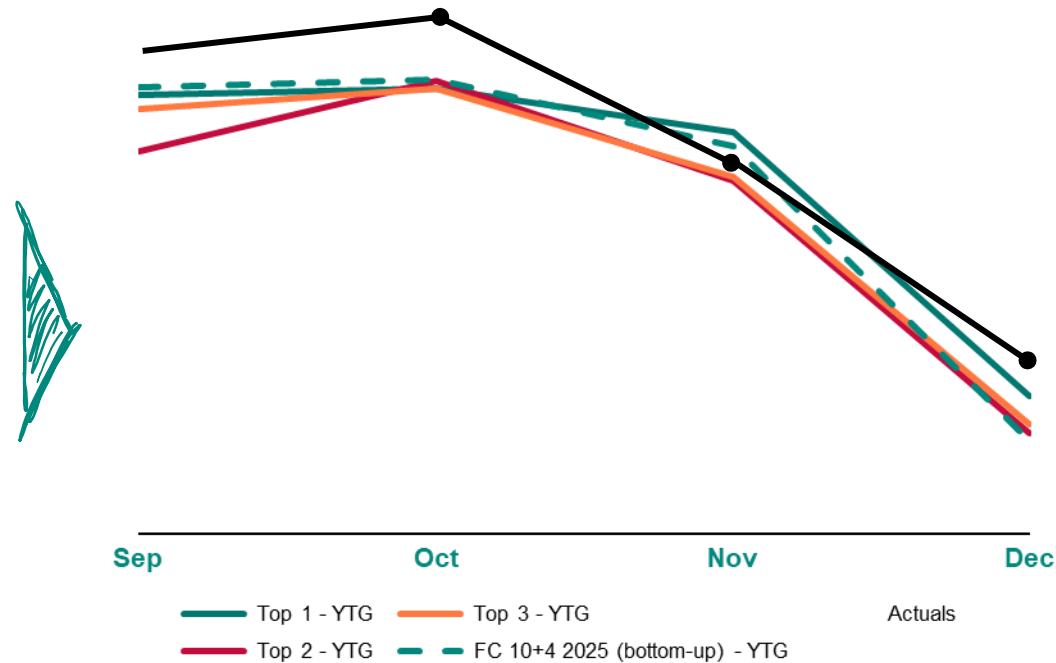
- ▶ Bottom-up Forecast FAR of 96% close to Actuals
- ▶ Predictions with FAR ~82%
- ▶ Univariate models not fully capable to consider all relevant information

▶ **Further refinement necessary**

Does it work?

- ▶ Univariate models
- ▶ Training Data 2018-04/2025
- ▶ Test data 05-08/2025
- ▶ Best 3 Models (~90% Forecast Accuracy "FAR")
- ▶ Bottom-up Forecast "10+4"

units product B „mature“



- ▶ Bottom-up Forecast FAR of 94% close to Actuals
- ▶ Top1 model with 95% FAR and only -3% total volumes
- ▶ All predictions with FAR ~94%

▶ Prediction faster and more accurate than manual Forecast

... can we get our

**FORECAST DONE
AUTOMATICALLY?**



YES!

... will we be able to

SEE INTO THE FUTURE?



N  **, but...**

... we should use our data to...

get **FASTER** and more **EFFICIENT**

LEARN the tools

IMPROVE accuracy and

REPLACE gut feeling with

UNDERSTANDING business drivers