



**iERP.ai**

FUTURE PREDICTION PLATFORM

# Hello, I'm Orhan Sönmez



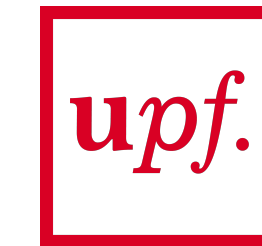
**iERP.ai**

Lead data scientist

Researcher



**Imperial College  
London**



**Universitat  
Pompeu Fabra  
Barcelona**

Studies



**mpi**

max planck institut  
informatik



# The Challenge



# MIGROS

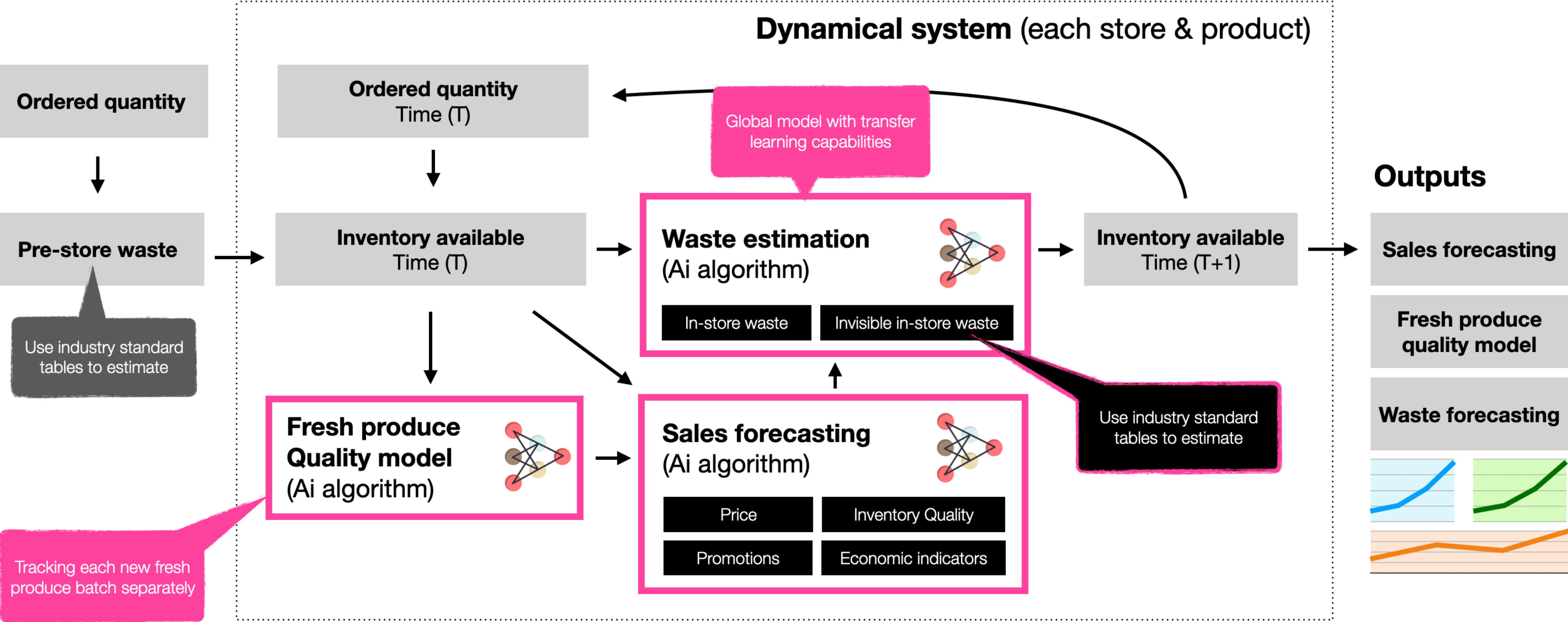


Reduce waste for fresh produces sold at MIGROS, one of the largest FMCG retailers in Turkey, by modeling the sales and planning the logistics.

*KPI Reduce waste 5%*



# Fresh produce solution diagram



# Output from iERP fresh produce forecasting model

**Predictions** - for each store & each product & on daily bases (30 days in the future predictions)

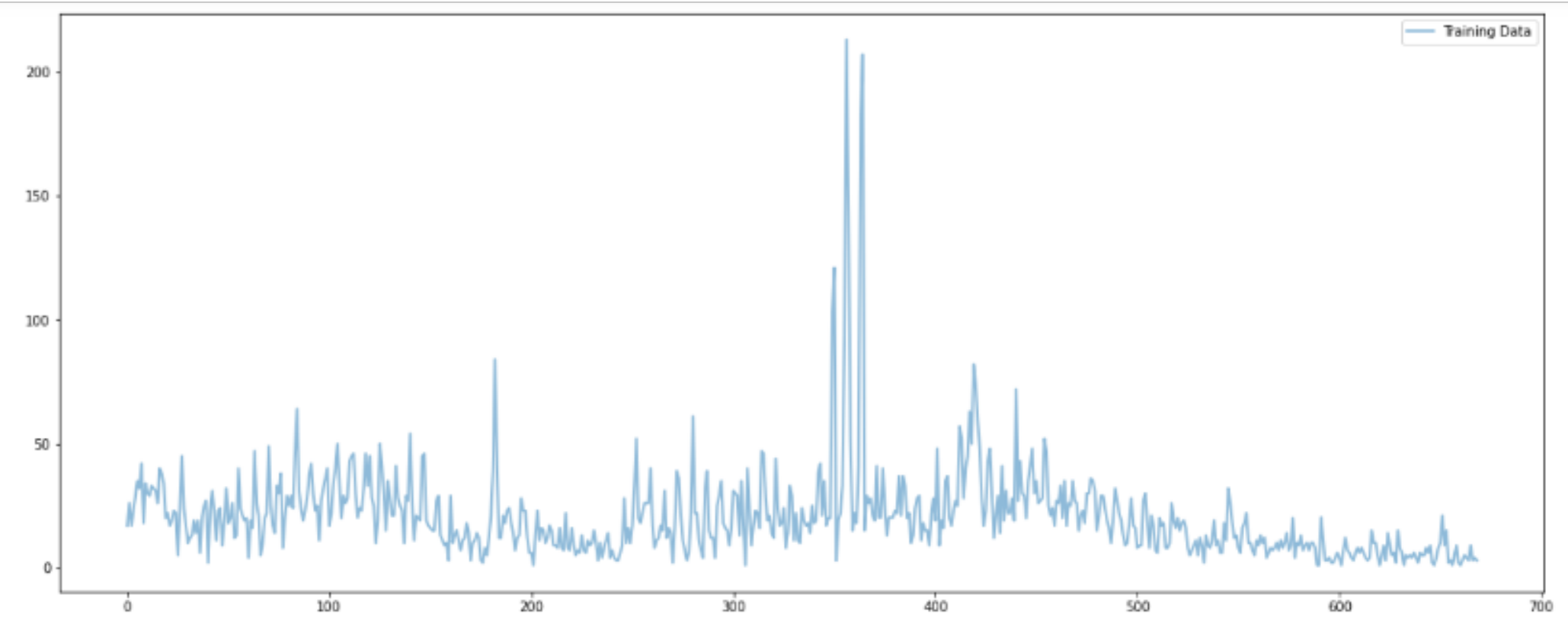
- Sales
- Quality
- Waste

## **What-if analysis**

- "Future" simulations
- Different produce logistics amounts
- Automatically updated predictions

# Sales Forecasting

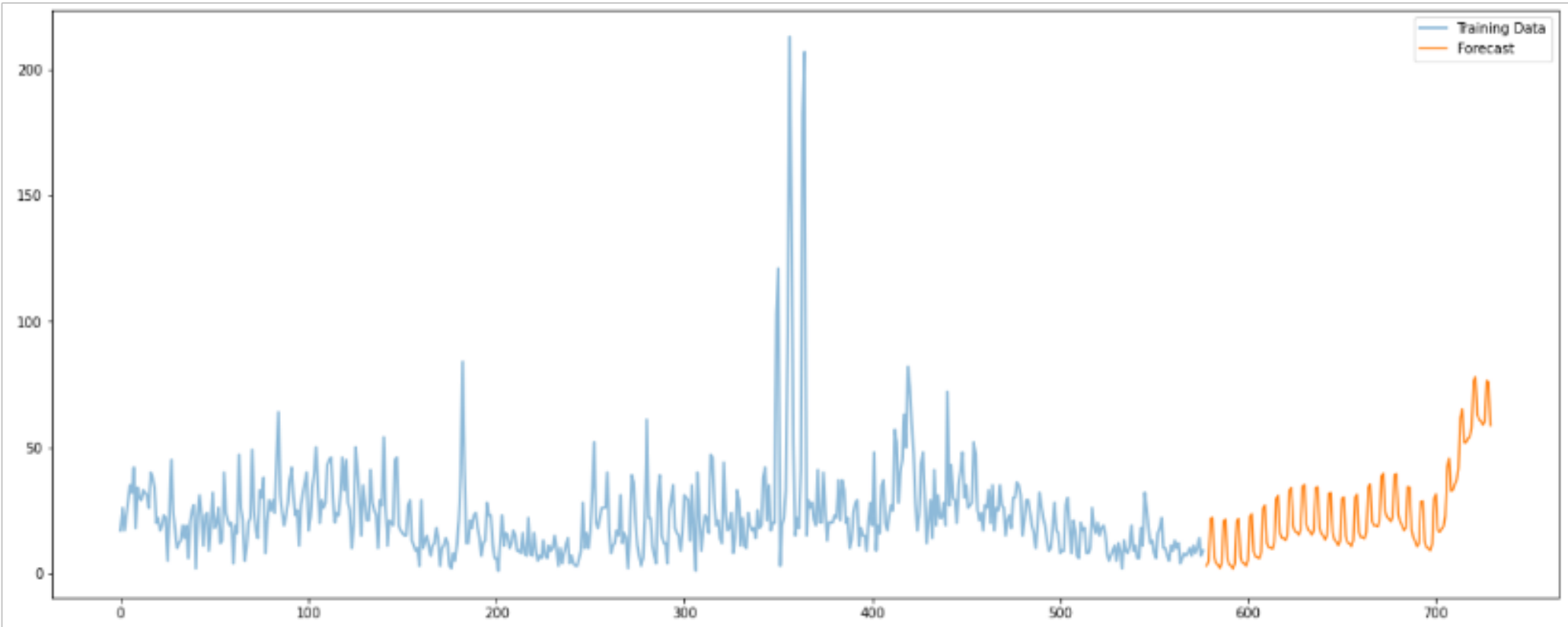
Input Data



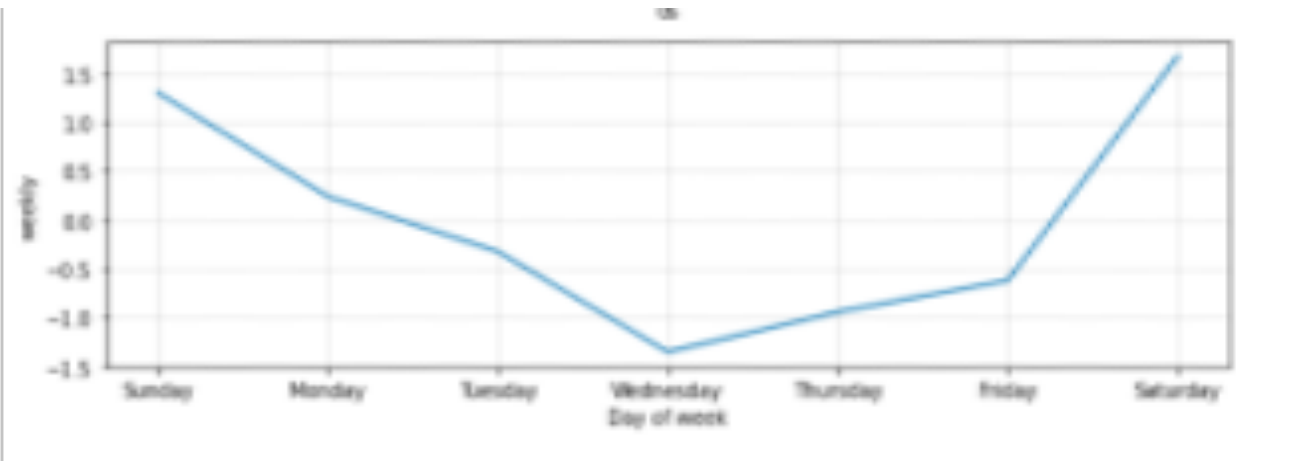
PROPHET



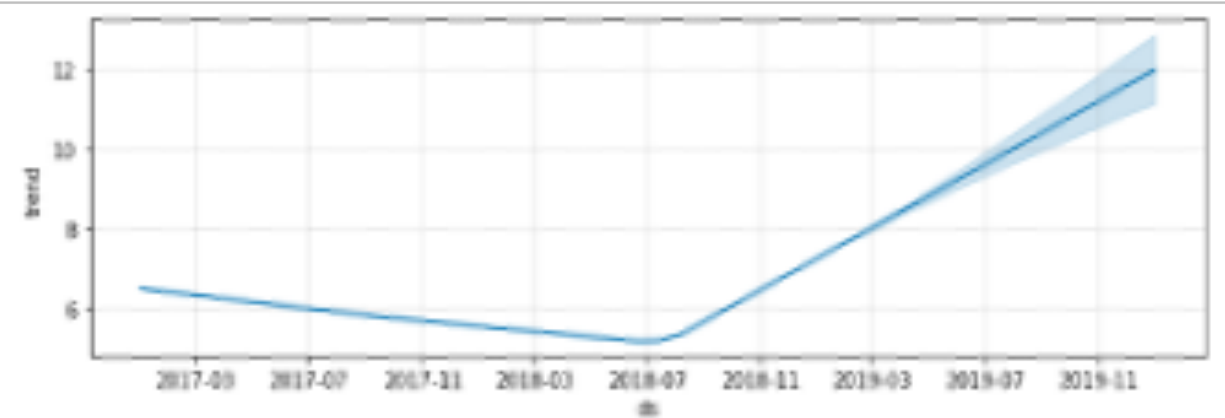
Sales forecasting



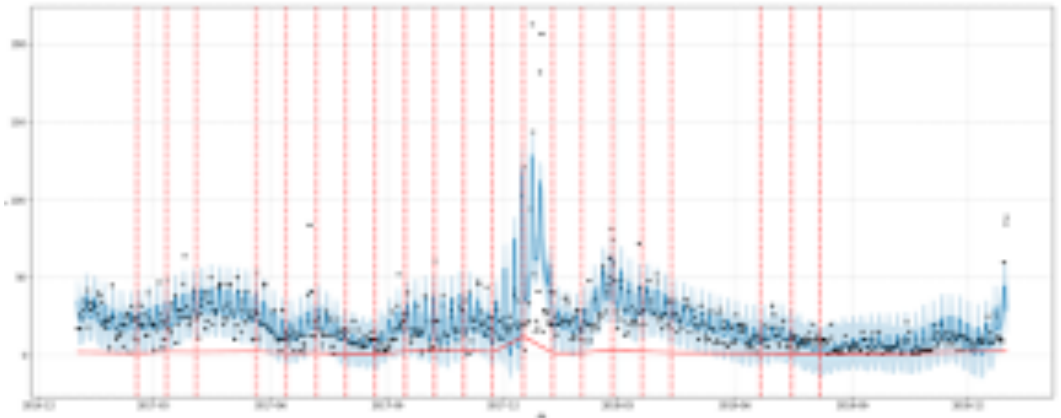
33.117% Test Error



Seasonality

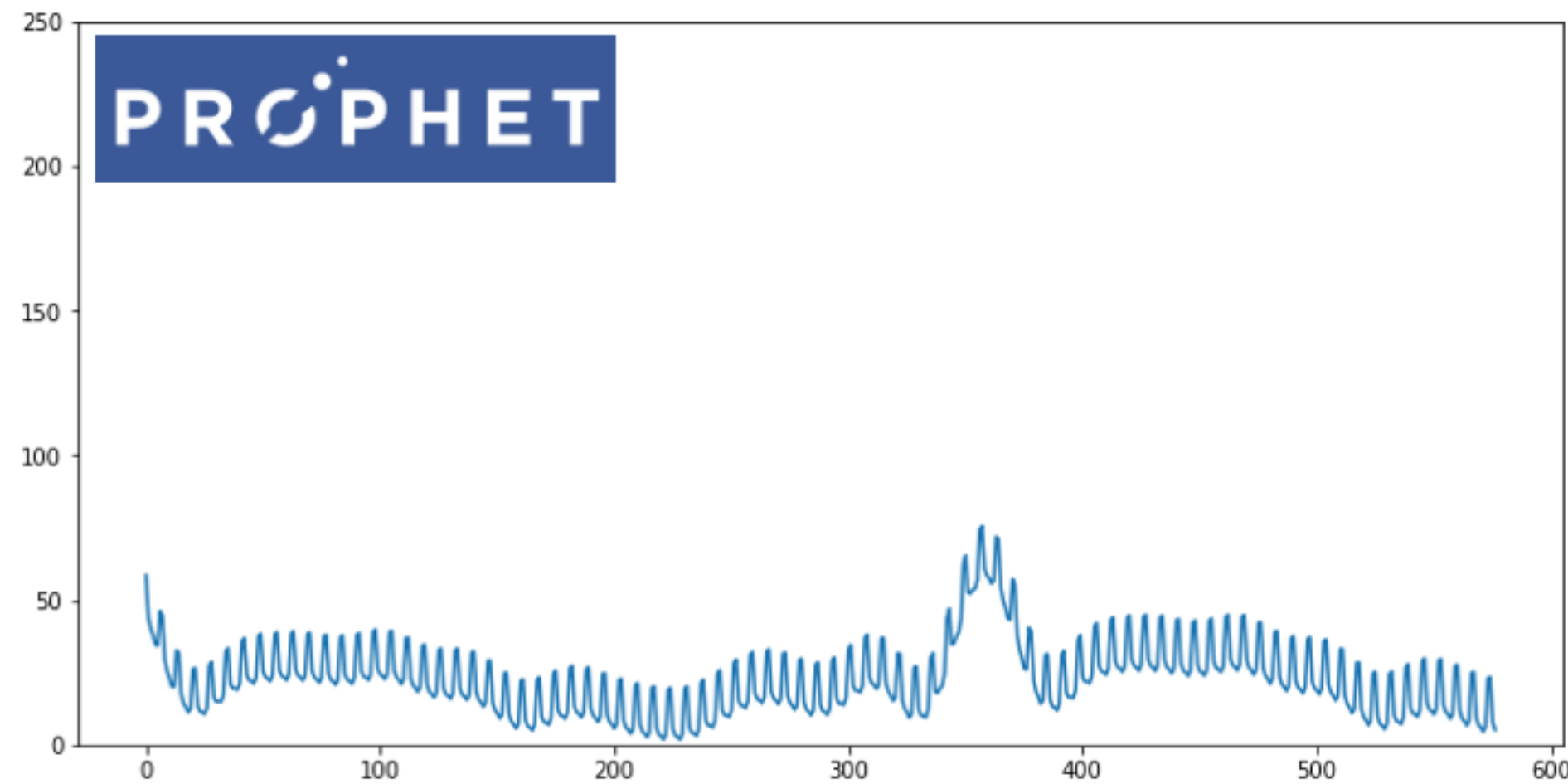


Trend

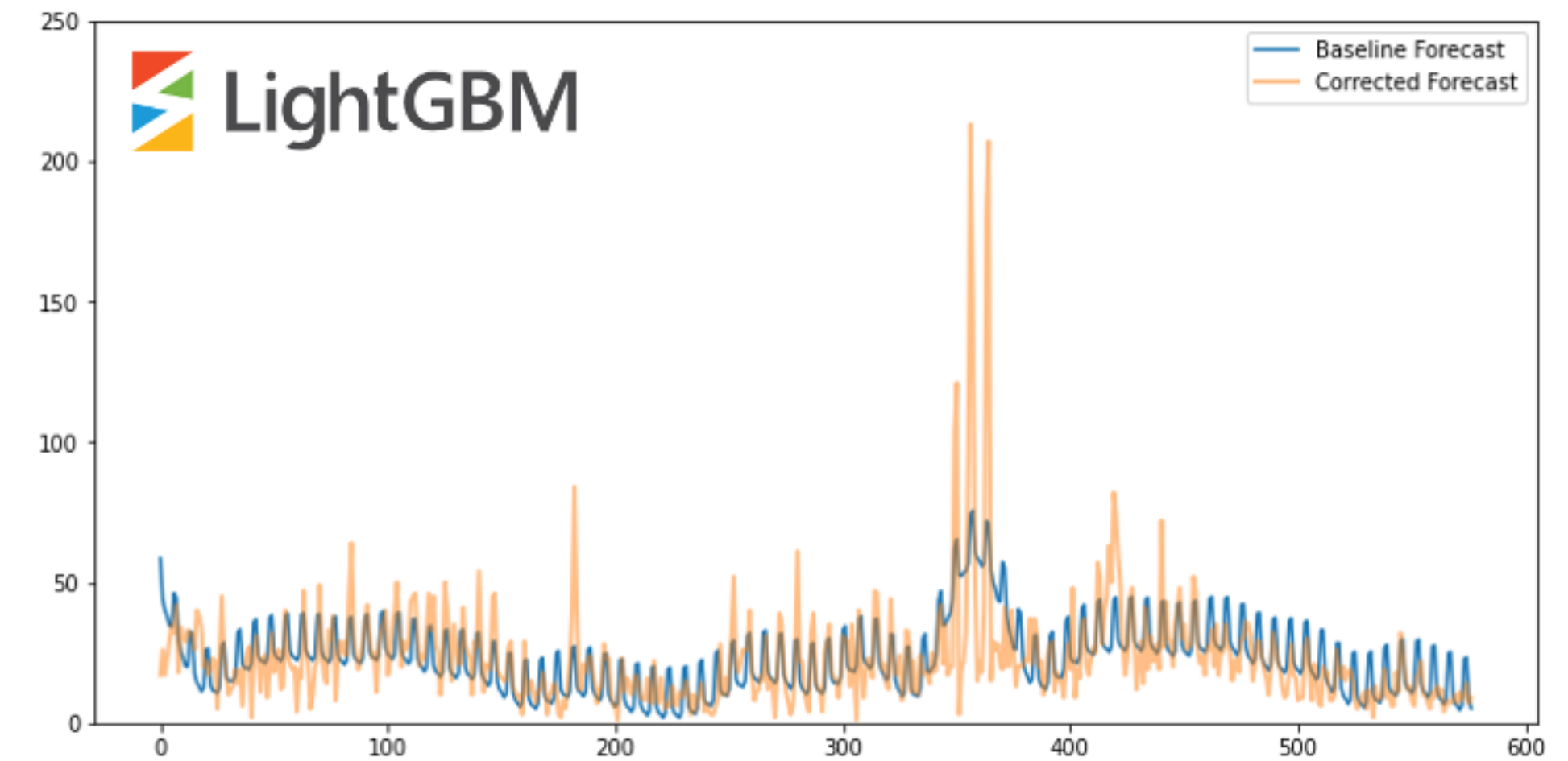
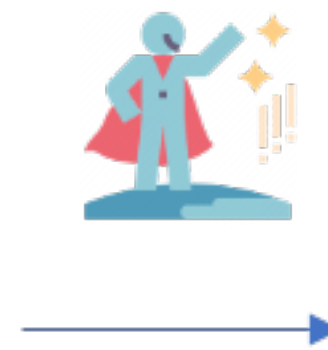


Change-points

# Forecast Correction



**33.117% Test Error**



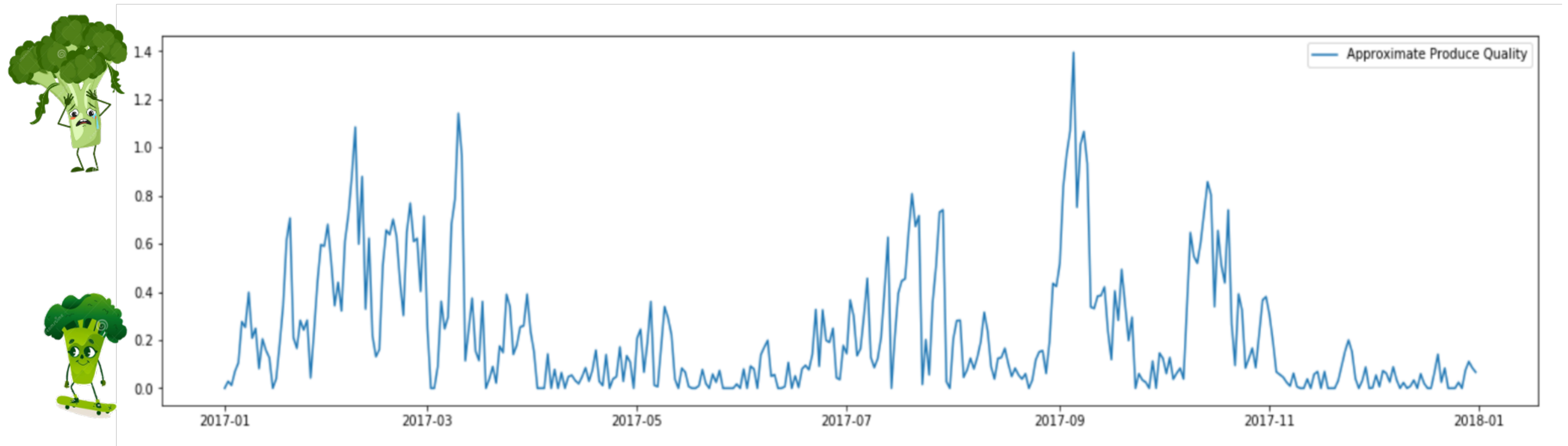
**2.212% Training Error**

## Sales Forecasting with Prophet used as baseline forecast

- External factors
- Price
- Promotions
- Engineered features

*“ WMAPE confirmed by Migros during EDI 4.891% ”*

# Quality estimation model

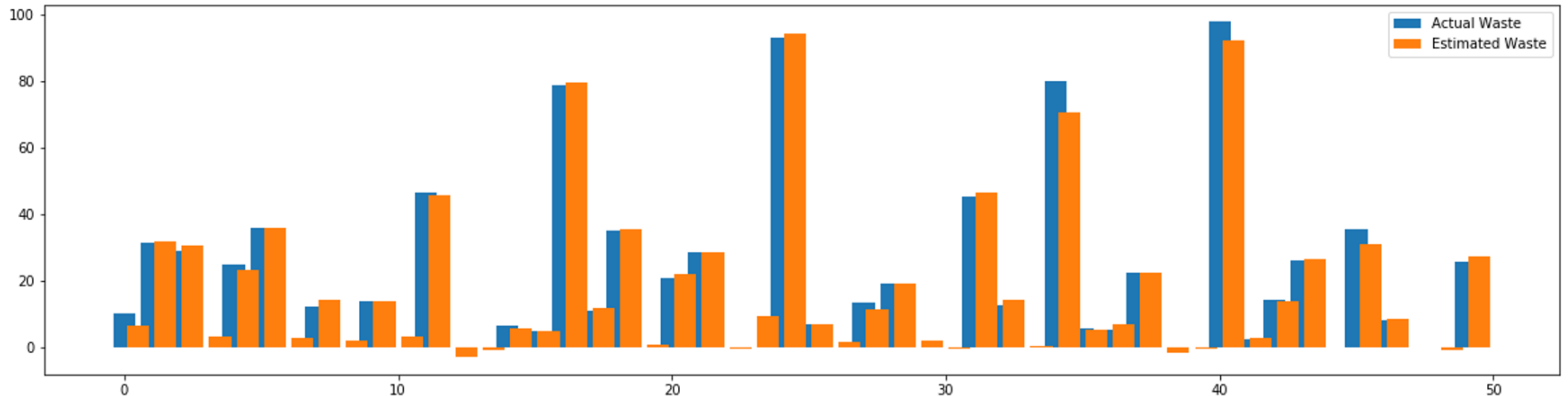


## Produce age and quality model

- Simulate produce age
- Estimate produce quality



# Waste estimation



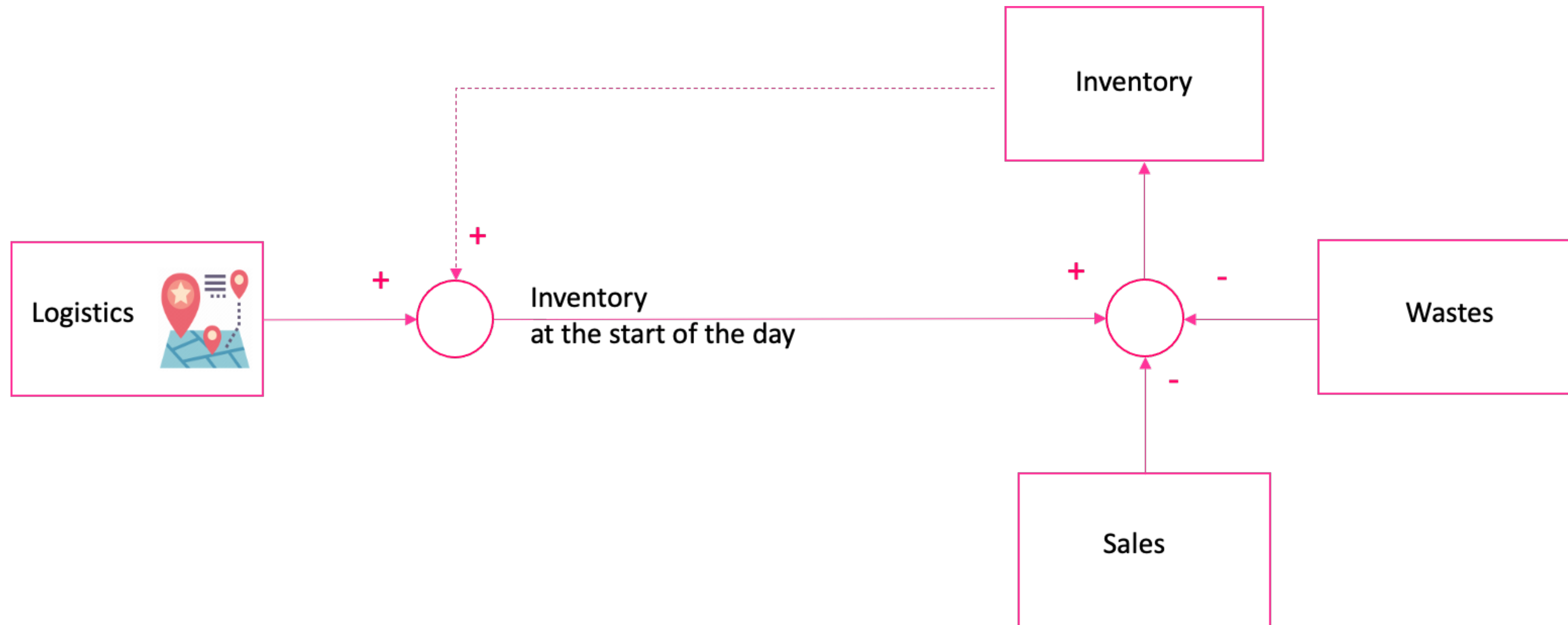
RMSE = 2.219

MAPE = % 11.506

## Prediction of waste based on:

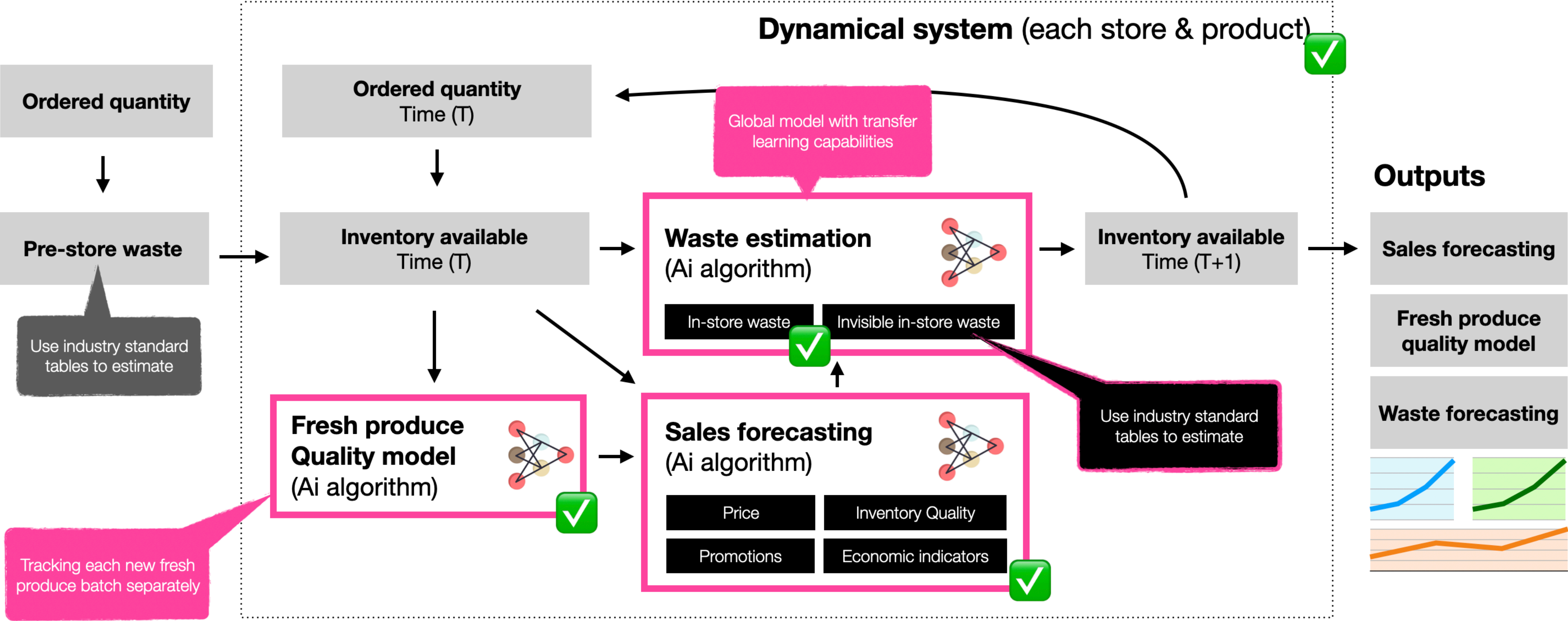
- Inventory
- Quality
- Price/Promotions
- Sales quantity
- One global model for all fresh produce and all stores
- Quality
- Transfer learning

# Linear Dynamical System



- Inferring logistics from the data
- Logistics is used as an input to produce age model
- Framework that connects them together

# Prototype verification summary





## iERP has moved to the EVOLVE phase

*In the top 9 out of 200+ startups*

- Retail challenge with **MiGROS**  
**TiCARET A.Ş.**
- All commitments delivered on time and achieved all KPI's
- Decreased error about 1%
- Decreased number of ML models over 50%
- New generation of algorithm developed and already in use with another customer
- Already dealing with 5 additional retail chain qualified leads

# Team



## BUSINESS TEAM



**Jozef**  
CEO  
Co-founder



**Dusan**  
COO  
Co-founder



**Rashid**  
Partner  
Management



**Dan**  
Sales  
Management

## DATA SCIENCE TEAM



**Orhan**  
Lead Data  
Scientist



**Ivona**  
Data  
Scientist



**Niko**  
Data  
Scientist



**Luis**  
Senior  
Developer



**Brano**  
Junior  
Developer



**Lasha**  
Cloud  
Developer

## DEVELOPMENT TEAM

## OUTSIDE HELP



**Eva**  
Partner  
Consultant



**Rob**  
Marketing  
Consultant



**Dita**  
Event  
Management



**Jakub**  
Tech  
Consultant



**iERP.ai**

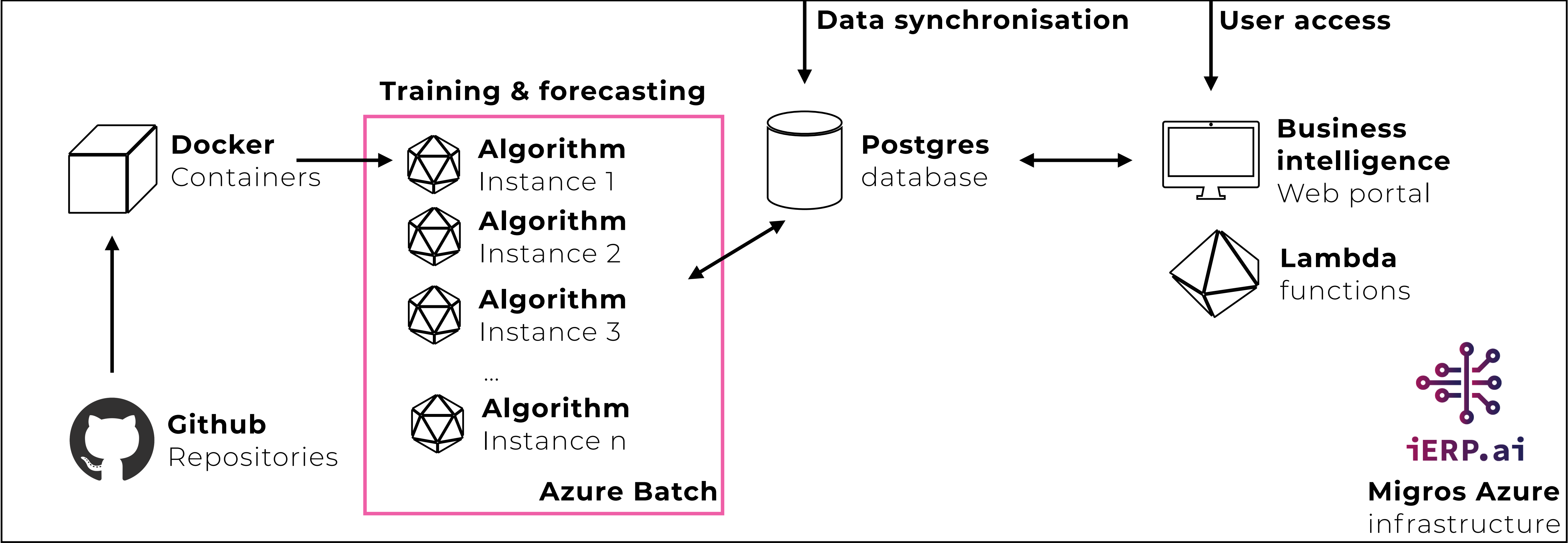
Thank you for listening.

And now it's time for your questions!

**Backup slides**

# Selection of tools & scalability

# MIGROS



# Data security and legal compliance

## iERP.ai security best practices

1. 2-factor authentication
2. Encrypted
3. TLS certificates

## Secure deployment

1. Customer-specific Azure infrastructure
2. Restricted access
3. Optional on-premise deployment

## Legal compliance

The solution does not collect or process any personal data; hence **GDPR does not apply**.

# Quality assurance and Risk management

Processes ensuring best project quality:

1. Data quality management
2. Algorithm precision management
3. Development process
4. Project management
5. Production environment



**iERP is proven team delivering EDI project completely on-time  
while exceeding expected quality!**