SIEMENS

Siemens Advanta Consulting

Case study challenge

NOVA IMS | 30th of March 2023

siemens-advanta.com

The challenge is a monthly sales forecast based on real data from a siemens business unit in Germany

| Challenge overview | Why is AI-driven sales forecast so important? |

Sales forecast on monthly basis

Business area
- Selected product groups of one Business Unit of our Smart Infrastructure Division
- Focus on biggest country of business unit (Germany)

Data
- Sales data from October 2018 to April 2022
- Important macro-economical indices

Evaluation:
- Quantitative evaluation of score (Metric: RMSE) via separated test set (May 2022 to February 2023 – 10 months)
- Submission until May 3 via Moodle and email

Manual forecasting is highly resource intensive – many "person-days" per month

Manual forecasting is biased through aggregated "judgement" of multiple stakeholders

Information scattered over many data sources ever-changing base-lines

"Opportunity Cost" of poor forecasting is significant – on working capital &/or customer satisfaction

SIEMENS

Data provided consists of daily sales data from siemens product groups and key market indices

Sales data

- Daily sales data per GCK (product groups) in EUR
  - Training set (daily): 'Sales data.csv'
  - Test set (monthly): 'Test Set Template.csv'

Datasets available on Moodle

Macro economical data

- Important macro-economic indices for Siemens in its most important countries: 'Market data.xlsx'
- This includes for example:
  - Production Index Machinery & Electricals
  - Shipments Index Machinery & Electricals
  - Price of Base Metals
  - Price of Energy
  - Price of Metals & Minerals
  - Price of Natural gas index
  - Price of Crude oil, average
  - Price of Copper
  - Producer Prices

Dataset available on Moodle

SIEMENS

The test set should be sent by May 3rd and the results will be determined quantitatively by SAC

Submission of results

- **Deadline**
  - Submission until 23h59 May 3, 2023

- **Test set submitted also to Siemens Advanta Consulting**
  - **Mail addresses:** Sebastian.rief@siemens.com and edward.graf@siemens.com
  - **Subject:** NOVA/SAC – Group Name (e.g., NOVA/SAC, Group A)
  - **Format:** Please use the CSV 'Test Set Template' including three columns (Year Month, Mapped_GCK, Sales_EUR

Evaluation of results

- **Quantitative evaluation of results by SAC**
  - Score on test set via RMSE

- **Qualitative evaluation of results, presentation and code by NOVA IMS**

SIEMENS

Preview

SIEMENS
Ingenuity for life