BBS Data Science, Field Work Lab – Meeting with Analytics Network experts – 27-4-2020

Group 4: Chemical company: implementation of a forecasting tool to guide the production planning

Suggested meeting structure:

1) Progress so far (5 minutes)
    A) Data formatting
        i. Data divided per API and sales accumulated over weeks
        ii. Last 6 months separated as training period
        iii. Understanding of the variance of sales between different APIs
    B) Technical progress
        i. Initialization of ARIMA model
        ii. Grid search of parameters
        iii. Automatization of process for all APIs

2) Challenges with modelling (45 minutes)
    A) ARIMA model yields poor results
        i) Situation: The results with ARIMA models inaccurate both in terms of volume and timing
        ii) Possible hypothesis
            1. Large amount of zero-sales weeks distract the results
            2. Other possible biases with data or team's understanding of the issue
        iii) Suggested solutions
            i) Approaches to handle dataset with many zero values (for example Croston Method)
            ii) Aggregating the dataset over months (violates problem description)
            iii) Other possible solutions

3) Discussion regarding performance metrics (10 minutes)
    A) Accuracy of forecasts: How close the test set forecasts are with the actual observations
    B) Coverage of forecasts: How large part of the total sales volume of the company do the forecasts cover
    C) Guidance value of forecasts: What will happen to the company inventory / production if the sales forecasts are used to drive production of APIs
    D) Other critical measures