Activity Forecast of Transportation Hubs

Executive summary
It is the story of an industrial forecast problem that has been solved, implemented and deployed, using statistics and involving a team made of academic and enterprise people.

Challenge overview
The main goal of this project was to provide a software tool to forecast the activity of the transportation hubs of the network of STEF, the European leader in temperature-controlled-logistics and transportation.

Implementation of the initiative
The problem was posed by STEF who needed to forecast its activity. After discussions with the academic partners of the project, it appeared clever to involve a PhD student. He was then soon recruited. He began to work, to integrate knowledge coming from STEF and from the academic world. He learned much from hub managers. He incorporated this knowledge and statistical methods of time series forecasting and finally built a forecasting method using Kettle and R. He implemented it, leaving place in the software solution for expert corrections. At the end of the day, because hub managers trusted in the project, the software solution was deployed in the STEF network of hubs.

The problem
From the mathematical point of view, the problem was to clean time series and to deduce trends and seasonality they contain. The job was also to model how public holidays and exceptional events influence the series. Then, it was needed to build a model that learns from those series its future behavior.

Results and achievements
The software solution has been done and deployed within the hub network of STEF. It daily helps hub managers to schedule and optimize hub activity.

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