

“Demystification of Big Data”

A portrait of Werner Stegmüller, a middle-aged man with short, light brown hair and blue eyes, wearing a dark suit jacket, a light blue shirt, and a dark blue tie. He is smiling slightly and looking directly at the camera. The background is a dark, solid color.

KSB AG, a globally operating manufacturer of pumps, valves, and associated services, developed a digital model together with Horváth & Partners to automatically predict incoming order volumes. Werner Stegmüller, Member of the Board at KSB, talks about the development process and the results of the digital forecast in this interview.

WHAT WERE THE MAIN OBJECTIVES FOR THE "DIGITAL FORECAST FOR INCOMING ORDERS" PROJECT?

MR. STEGMÜLLER / For a long time KSB has already been involved with digitization of business processes, as well as topics such as big data analytics and Industry 4.0. However, we think it is essential that our employees develop a comprehensive understanding of these issues. We do this by applying specific solutions which clearly highlight the practical benefits for KSB. The "Digital Forecast for Incoming Orders (IO)" project is an introduction to big data analyses for KSB, and with the help of a pilot program we wanted to highlight its benefits, make digital trends tangible, and first and foremost, to establish practical expertise. It should also contribute to a certain demystification of the term "big data."

WHAT ROLE DOES INTERNAL PERSUASION PLAY IN PROJECTS LIKE THIS?

MR. STEGMÜLLER / Support for the divisions is absolutely critical for the successful introduction of a big data application and sustainable changes to operational processes. Success stories kindle enthusiasm more easily than purely abstract concepts. Typical statements in this context might include: "Show me how the algorithm calculated the order probability of my project offer from yesterday and I will start trusting you and the algorithm." We want to report proof with tried and tested solutions.

HOW DID YOU PROCEED WITH THE PROJECT TO OBTAIN RESULTS QUICKLY?

MR. STEGMÜLLER / For agile project work, we put together a small, effective team with expertise in sales and controlling. Preliminary results were played back several times and simultaneously used to optimize our CRM system. We also made a conscious decision to forgo a digital projection of overall incoming orders and pursued the considerably more specific approach of model-based plausibility determination to also enable fast, productive use of the model.

WHICH DIGITIZATION PROJECTS WAS KSB ABLE TO BUILD UPON DURING THE PROCESS?

MR. STEGMÜLLER / We tied the forecasting model to previous automation projects for sales processes. For the past 25 years KSB has used configurators in sales to adjust pumps for individual customers' needs by using IT. To be able to produce customized products in batch size 1 using automation, sales and production configurators are used.

HOW DID YOU GO ABOUT DEVELOPING THE PILOT?

MR. STEGMÜLLER / Initially, we analyzed the framework conditions of the "Digital IO Forecast" and defined the scope of the showcase. Then the algorithms were constructed and tested based on a tree ensemble model. One of the advantages of the decision tree method of this algorithm is that many hyper parameters can be used to individually adjust the model. The data base for the showcase is formed by the opportunities stored in the CRM system and the historical data sets for incoming orders in the ERP system. The objective was to predict the probability of incoming orders for every sales opportunity.

WHAT WERE THE MOST IMPORTANT OUTCOMES OF THE PROJECT?

MR. STEGMÜLLER / Our forecast model predicted the probability of incoming orders much more precisely than the respective sellers. Using the algorithm, the success rate increased from 63% to 79%. It is interesting to note that the digital model more precisely predicted the probability of orders independent of whether the data for the projects, standard product business, or services was provided.

WHAT ARE THE NEXT STEPS?

MR. STEGMÜLLER / In an expansion stage, we will further develop the model for integrated, rolling forecasts for incoming orders together with the Horváth & Partners Steering Lab. A comprehensive forecasting model must differentiate more strongly between different planning dimensions, for example, according to sales channels. If the performance of this comprehensive automated forecast is comparable to manual forecasting, we could significantly increase the efficiency of our sales and controlling processes and better manage the capacities in construction and manufacturing. With the insights from the showcase, we can identify additional application cases and further develop the model accordingly. ■