AI mechanisms for process prediction, based on Microsoft and Snowflake tools

BACKGROUND

Our task was to build one consistent data source, integrating data from various systems, for a very large organization (ABB corporation), based on Microsoft and Snowflake tools. In 2021, a special Data Engineering/Data Analysis team was appointed for this purpose. The goal was to construct AI-based mechanisms that would enable the analysis of data in warehouses in terms of process prediction. This, in turn, was to enable planning optimization of manufacturing, purchasing, logistics and forwarding processes, as well as device service and replacement. In short, it was essential to create mathematical and analytical models that would allow for automatic aggregation and interpretation of data.

PROBLEM

- data distributed over domain-specific systems, hindered access, especially at the level of decision-makers
- no data integration for orders, deliveries, inventory, HR systems (resource and human resources)
- a considerable volume of data, no mechanisms to automate ETL processes as well as aggregation and systematization

SOLUTION

The project is coordinated by a technical leader appointed by TTMS who is also a solution architect. Dedicated Snowflake and Microsoft tools were used to construct mechanisms for the automatic acquisition, cleaning and systematization of data in the central Data Warehouse.

1 Technical Leader

OUTCOME

In the next stages, the acquired and available information will be used for the construction of ML mechanisms and AI algorithms, thanks to which predictive effects will be obtained regarding various aspects of the daily operations of the Corporation. Among others, it is worth mentioning order optimization, as well as improvements in supply chains and production processes or repair planning, shortening the time of order fulfillment and increasing the efficiency of processes. This, in times of permanent shortage of qualified personnel, will enable better use of specialists. There are a lot of needs and ideas - we hope that the built artificial intelligence and machine learning will, at some stage, reach a level that will be our constant support. This will be followed by the implementation by our client of the already invented ideas and the creation of completely new areas, as well as the development of one of the most technologically innovative entities in the industry.