



Production Capacity Planning at Continental Automotive Czech Republic s.r.o.



Situation

With annual turnover over 33 billion €, Continental is one of the leading global automotive industry suppliers. In the Czech Republic, Continental has a plant in Frenštát pod Radhoštěm, where the Company employs over 3,000 people.

The highly competitive situation on the market as is, places huge demand on production efficiency. Therefore the plant is heavily focusing on capacity planning for the individual departments. The effort of the CBS Department in capacity planning for the mid-term period clashed with nonconforming tools for processing input data located in three different systems (SAP, Excel, MS Access DB) and stored in several different formats (Excel, text documents and mdb).

The organization lacked a strategic and uniform tool for planning capacities based on the time and intended or required production output, that would automatically create a data cube from such distributed data and allowing calculations of capacities for the workstations, units and departments. A tool that would allow sharing and approval of planned capacities and that would made the planning process accessible to a wider group of users

Business Objectives

The objective of the implementation was to find a solution that would visualize the utilization and performance of production lines and other equipment by the individual projects based on input data for a period of one year allocated into weeks (52) or months (12). The data cube should provide means to execute simulated operations for the individual workstations changing its settings, workload schemes, capacities and utilization with regards to the production plans that will be used as a basis for production planning and for creating advanced analyses.

Solution

The solution - Capacity CUBE - creates a data cube from input data (from SAP, DB MS Access, manually managed Excel files), allowing the following operations

- Changes in production times,
- Changes in production output,
- Changes in line/equipment configurations, work-load schemes and so on,
- Split project to several lines,
- Transfer the whole project to another line

The following outputs are available for every simulation:

- Calculations and a chart view on the capacity of all workstations based on the logistic data,
- Calculation and graphic presentation of the utilization of workstations by individual projects,
- Report on overloaded and nearly overloaded workstations,
- Calculation and visualisation of the maximum capacity of workstations by items,
- Calculation and visualisation of planned capacities of workstations – conversion to the same SMT configuration ("groups"),
- Calculation and visualisation of planned capacities of workstations based on components processed (by weeks),
- Calculation of planned capacities of workstations based on components processed with regard to the actual plans (by months).

All outputs above reflect the production setting configured by the User and allow a quick insight of the impact of changes in plans regarding the utilization of the workstation, necessity to add a new workstation and so on.

Benefits

System Capacity CUBE helped getting input data under control and represents the basis for a fast and effective capacity planning procedure in the medium term period. The simulation process and reporting have been standardized across departments. Simulations (data cubes) can be shared among users as well. The system also provides means to archive monthly plans in the system and thus it is no longer required to search for older data in several different places and tediously process such data.

At the same time, the requirement for the possibility of defining own scripts for processing input data exported from SAP or other systems has also been met.

Products and Technology

- MS SQL Server 2012
- DevExpress.NET development tools
- MS Windows Server 2012
- Python

