INCREASING THE VOLUME OF PRODUCTION ON THE SAME FLOOR AREA? DYNAMIC SIMULATION AS A SOLUTION

Client: KROMBERG & SCHUBERT S.R.O.

Engaged in: Development and manufacture of complex electrical installation systems for the automotive industry

implementation location: KROMBERG & Schubert s.r.o., Industrial park Kolarovo, Slovakia

KROMBERG & Schubert is an international industrial company with more than 100-year history and extensive experience in the field of automotive production. It is mainly engaged in the production of cable harnesses, and the company supplies components to the largest European car manufacturers. It employs more than 40,000 people worldwide. The plant in Kolarovo has been a part of the company for more than 20 years.

167%

INCREASE IN PRODUCTION USING AVAILABLE CAPACITIES

"You have certainly already found yourself in a situation where you could not afford to make any mistake. We experienced this when we faced the challenge of significantly increasing production for a major customer using existing resources and without interruption of supply. We decided to try it "blind" at first. For the first time, we applied the tools of a digital enterprise, where we verified the newly designed production layouts using dynamic simulation. Thus, we were able to detect hidden bottlenecks in advance and remove them in time. At the same time, we have gained a new perspective on our production in virtual reality. If you want to go for a new, yet unproven solution, it's good to be able to afford to make a mistake – in the digital version."

Jaroslav Hric, Managing Director,
KROMBERG & Schubert s.r.o.

Increasing production while maintaining available capacities

The Slovak branch of the company faced a new challenge: it was necessary to prepare for an increase in production in one part of the manufacturing plant in Kolarovo but this needed to be done on the same floor area (1,000 m²) and with the use of available capacities. The aim of cooperation with Asseco CEIT specialists was to design a new production layout in the part of the production floor area in order to achieve a smooth material flow, to define the number of workplaces, the number of workers, as well as positions for work in progress.

Certainty in future decisions thanks to dynamic simulation

To meet these aims, Asseco CEIT specialists used dynamic computer simulation. It brings certainty to innovative decisions because its task is to verify how the system of production or logistics processes works after it is launched or after implementing changes to its parameters.

In addition to the production performance of the system it is possible to determine as part of the simulation also the utilization of equipment and operators, the ongoing production time, the maximum and average stocks in individual warehouses, or the impact of failed products on the required production performance. Dynamic simulation also enables verification of the system behaviour in extreme situations (e.g. long-term machine failure) that can be "tested" in the safe world of a computer model. The enterprise can avoid high losses from additional modifications to a poorly designed system by such planning before the actual implementation.

The project, including simulations of 25 processes, lasted approximately three months and involved more than fifty production sites and machines. Asseco CEIT specialists focused on the dynamic verification of the future situation, also including the definition of bottlenecks. The task was to dynamically check the capacity of the equipment used in the new layout for the expected production and at the same time to find the optimal ratio of retyping production processes, to define the optimal amount of work in progress and the optimal utilization of assembly workers at workplaces. They also focused on setting the product mix with regard to the maximum possible utilization of workplaces and smooth material flows.

Outputs also in virtual reality

The design of the final production layout was preceded by a series of workshops with the KROMBERG & Schubert team. At the end of the project, the company obtained a precisely defined number of workplaces in the planned production, a proposal for a new production layout, a defined number of workers according to the skills matrix and the definition of positions for work in progress.

The presentation of the project outputs took place in an original and innovative way using virtual reality. The Slovak branch of the company proudly presented the project at the international level, which is a proof of their pride of the successful cooperation.

Project in numbers:

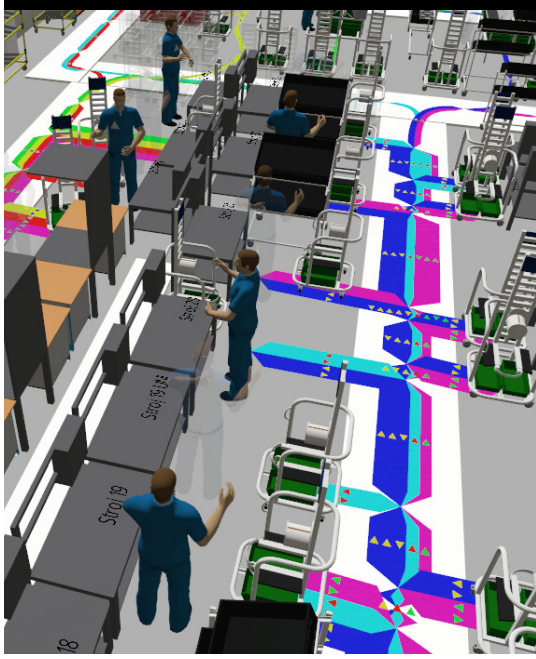
25
simulated processes

project duration
3
months

project floor area
1,000 m²

53
production workplaces and machines

Dynamic simulation
brings certainty to innovation decisions



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