



MANUFACTURING & PRODUCTION

Within manufacturing environments, value is added to materials. But to create this economic value and convert it into profit, there are many challenges!

KEY BENEFITS

- Test a future system in an early design stage.
- Test and improve proposed modifications without disturbing the operational environment.
- Modeling and analysis of several scenarios to be prepared for the future.
- Optimization and safeguarding of investment planning for production and transport equipment.
- Estimating the influence of uncertainties and variations.
- 2D and 3D visualization.

INVESTMENTS

First of all, there is the decision about investments for buildings, equipment and staff. Simulation can support the efficiency of these decisions by estimating the Return on Investment (ROI) under various, dynamic circumstances. The selection of the order fulfillment strategy (CODP), production techniques and raw materials are examples of variables in this consideration.

Besides these fixed costs in manufacturing, there are many variable costs, related to the number of products produced. The same simulation models can be used to develop a situation with improved efficiency and thus reducing the proportion of the fixed costs. A well-known indicator for the efficiency of equipment and staff is the overall equipment effectiveness (OEE), which is also a commonly used performance indicator in simulation models.

Using simulation software supports you in managing: complex manufacturing environments, influencing factors and costs.

CRUCIAL INFLUENCING FACTORS

Availability and breakdowns of equipment are strongly influencing factors, well worth studying improvements by simulation. Another crucial factor is planning. Both on tactical level (Rough-Cut Capacity Planning) and operational level (scheduling) simulation models are used to determine the yield of key planning factors like batching rules, changeover times, and balancing. Aspects that relate seamlessly to modern principles, such as Lean Manufacturing and Just-In-Time (JIT), which also focus on efficiency improvement, customer value and reduction of lead time and costs.

TOTAL COST OF OWNERSHIP

Another trend is the attention for Total Cost of Ownership (TCO), a cost calculation method to determine direct and indirect costs of a product or system during its life cycle. As simulation models can cover long periods, deal with uncertainties and process dynamic, changing behavior over time, they are ideal for these TCO-calculations.

INTEGRATION WITH OTHER IT-SYSTEMS

As more and more information regarding the products, the processes and the orders is available in IT-environments, a huge gain in modeling effort is realized by integrating the simulation software with other software systems such as ERP, WMS and MES. Such integrations have been achieved very often with Enterprise Dynamics®, in order to perform studies about manufacturing environment improvements.

EXPERIENCE INCONTROL

Through knowledge and experience of the past 20 years, INCONTROL can proudly say that Enterprise Dynamics® is the most innovative simulation solution to analyze and optimize processes within the manufacturing market.

