

Field of application: Personnel Simulation

The initial situation

Today's optimization methods of the digital factory as well as simulation mainly aim at the improvement of technical processes within manufacturing and logistic processes. However, the personnel still represents the decisive success factor in most processes, but is rarely included in the optimization consideration.

Personnel simulation offers the possibility to investigate the dynamic interactions between the manufacturing or logistics process, the workplace and the available personnel.

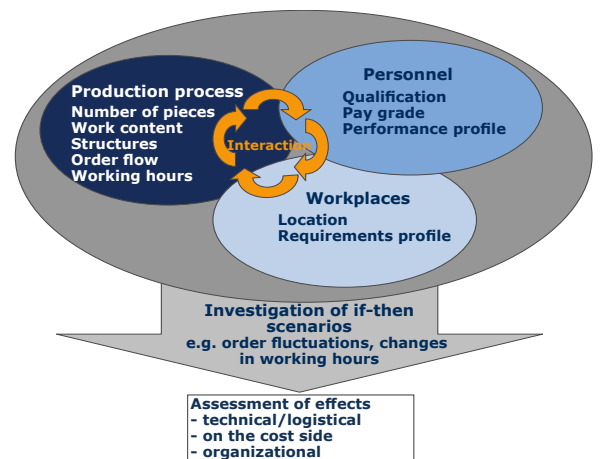
The objective

The personnel simulation can be carried out from different objectives, e.g.:

- Support of personnel requirement planning,
- Support of the personnel disposition,
- Investigation of the effects of changes in working time models (e.g. conversion from 3- to 2-shift operations)
 - long-term consideration of the age structure development

The following points of view can be considered:

- technical/logistical (e.g. what impact does personnel availability have on logistical parameters such as throughput, lead time, or on-time delivery?)
- cost-related (e.g. what are the cost savings in the event of a fluctuating order load by making personnel capacities more flexible?)
- organizational (e.g. can a higher efficiency be achieved by dynamic personnel scheduling in a picking system?)



Representation of the considered process elements in the personnel simulation

The personnel simulation offers the possibility to search for an optimal solution without risk and under variation of all relevant influencing variables.

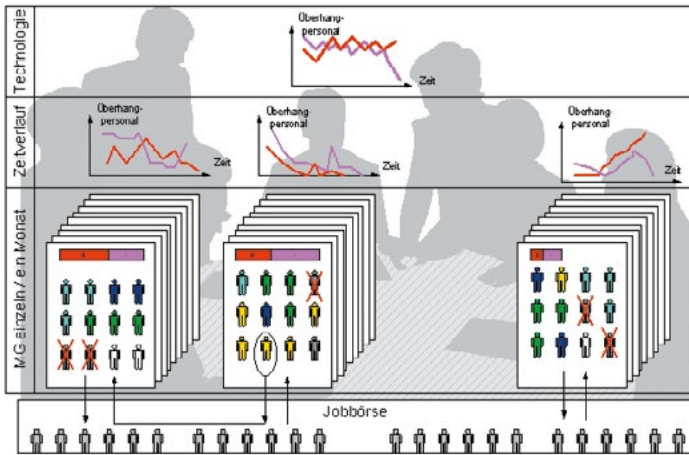
The search for the solution can be multidimensional. This means that the conditions of the manufacturing process (e.g. strategies for controlling the order flow) do not have to be assumed as given, but can be varied just as the definition of personnel and workplaces. Thus, for example, personnel planning can influence process planning and vice versa.

Goals and benefits

The principal benefit lies in the safeguarding of decisions in personnel planning and scheduling as well as in the determination of the optimal interaction between the manufacturing/logistics process, the workplace and the personnel.

Concrete project examples:

- Determination of surplus personnel when converting from a 3- to 2-shift operation,
- Finding the optimal combination of permanent and temporary workers due to fluctuating order loads,
- Long-term determination of personnel requirements based on forecasted order volumes.



Example of an application concept in the automotive industry

Fields of application

- Personnel requirements planning
- Personnel scheduling



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- Objective and independent analysis
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 - Development and use of standards
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- Development of innovative solutions for the efficient handling of problems
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Feel free to contact us

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