APPLICATION EXAMPLE RESOURCE PLANNING

OPTIFER© is a software module integrated into the PPS system *RatioFer*©, which is embedded in various flow production fields (pharmaceutical, food, beverage, etc.). It has access to the production database and supports the planner interactively. The planning task consists of scheduling work processes and thus also allocating required resources (personnel, machines, workstations, ...).

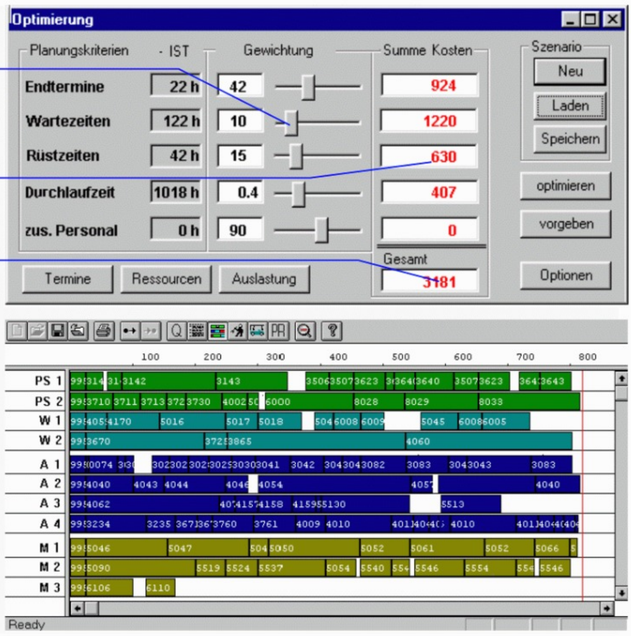
The utilization of resources, completion on schedule, set-up times, throughput times and capital commitment describe the costs of such a production plan.

Der Planer muss lediglich seine Planungsziele konkretisieren. Ist ihm die Termintreue wichtiger als kurze Durchlaufzeiten? Dazu legt er Gewichtungen fest, die den Ressourcenverbrauch, die Auslastung und Termineinhaltung mit (fiktiven oder realen) Kosten bewerten. Der Computer findet automatisch das Kostenoptimum und gibt auch die Zusammensetzung dieser Kosten an.

Bei Bedarf kann der Planer durch Variation der Gewichtungen die verschiedenen Kosten verändern und damit die Rangfolge seiner Optimierungsziele steuern: Ist ihm die Durchlaufzeit zu lang, erhöht er das entsprechde Gewicht und optimiert erneut.

Der optimierte Fertigungsplan wird grafisch dargestellt, so dass die Auslastung der Ressourcen und eventuelle Überschneidungen oder Engpässe sofort sichtbar sind. Zeitskala und Planungshorizont sind frei wählbar.

Bei kurzfristigen Änderungen erfolgt schnell eine Nachoptimierung.



TYPICAL APPLICATIONS ARE

- Production plans
- Duty rosters
- Machine or hall occupancy
- Timetables
- Material and traffic flow systems

In all cases, the free parameters of a plan (start times, allocations) must be defined in compliance with boundary conditions (capacity, availability, dates, processing sequence) so that a combined quality measure (dates, capacity utilization, quality, costs) is optimal.

OUR SERVICES

Systems research delivers your turnkey total solution with project experience, mathematical methods and software integration:

- **Application-oriented problem analysis**
- **Support for data acquisition**
- **Visualization of the results**
- **Integration into existing customer IT structures, e.g. PPS systems, databases**
- **Documentation and training**

Systems research advises and supports you comprehensively in the analysis and selection of problem-specific methods. Our project management with practical experience and powerful software ensures a smooth process. Our overall concept also includes the user interface, database connection and network coupling.

FURTHER PROJECT EXAMPLES

RECIPE OR PROCESS OPTIMIZATION

On the basis of a good simulation model, variations of influencing variables (composition, residence times, control sequences) can be played through.

ENGINEERING

Frequently, the components are specified for recurring design tasks and the target is precisely specified in the specifications. The variety of possible combinations and constantly changing properties of available components alone make the problem confusing for people.

The basic scheme for these optimization tasks is largely similar. There is a – mostly complex – simulation model for a process with planning parameters that must be set as optimally as possible in compliance with specified boundary conditions. For this evaluation, there is a quality measure that clearly assesses the quality of each simulation result. However, the relationship between parameters and results is so complicated and confusing that simple standard procedures fail. The automatic optimization strategy plays through many combinations in an intelligent and efficient way until an optimum or a sufficiently good solution is found. The planner can change the quality standards and thus has much more transparent possibilities to influence the result.

INTEGRATION INTO THE CUSTOMER'S IT STRUCTURES >

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