

1. Logistics planning (effecton Consulting GmbH)

1.1. Planning and installation of new warehouses

During the planning of new warehouses the requirements of the materials stored as well as the logistics process must be taken into consideration. Starting from a quantity structure, that contains planning data such as storage capacity and stock turnover, effecton Consulting GmbH creates a rough concept using a CAD layout of the warehouse for its customers in collaboration with architects.

In the next phase, the concept is detailed further and the following volumes are deallocated for example:

- Planning the shelving systems for the stored material taking into consideration the applied fire protection classification and its requirements
- Planning the handling equipment
- Planning the forklift trucks (type, design and number)
- Planning IT systems with supporting scanners and forklift terminals
- Detailing the goods receipt and goods issue area with supporting handling and booking processes

Finally, effecton Consulting GmbH provides support for tenders and the associated documentation in the realisation phase.

1.2. Load carrier and packaging planning and development

The optimal design of load carriers for cost-optimal series production is of fundamental importance in logistics as well as in production. The following criteria, for example, influence the design of load carriers:

- Product protection (in other words protection of the material during storage and transportation)
- Ergonomic loading and unloading of the load carrier
- Risk-free handling of the load carrier
- Consideration of the materials handling equipment and storage systems in use
- Optimum packaging density in the load carrier to minimize transport and storage costs
- Consideration of module measurements in the transport chain
- Consideration of methods for securing loads during transport

effecton Consulting GmbH can look back on long-standing and very successful work in this field and offers its clients the development of optimal carrier concepts made from steel and plastic. Specialised interior finishes, such as textile and/or plastic partitions or even accurately shaped parts on folding platforms can be created as well as non-returnable packaging made from cardboard or foil.

1.3. Load carrier and/or container management

Optimal container management of load carriers is important for ensuring security of supply while simultaneously minimizing load carrier costs (investment or leasing) in serial production. The following criteria, for example, influence the needs assessment for load carriers:

- Container revenue per number of parts and working day
- Production concept (lot sizes or linear production)
- Number of days of circulation for the load carriers, resulting from the transport chain and stock to be assessed

Permanently changing framework conditions in production (e.g. fluctuating needs, production rest periods, advance production etc) necessitate a continuous management and controlling of the container stocks.

effecton Consulting GmbH supports its customers in the optimization process and also in establishing an efficient container management system.

1.4. Process optimization/ lean manufacturing and logistics

Due to the ever-increasing cost pressures in the globalized world, all companies are forced to continuously analyse their processes and constantly improve them. In this scenario, effecton Consulting GmbH can provide necessary resources for its clients and support them in the implementation of individual measures.

1.4.1. Logistics costs calculations

With the help of effecton Consulting GmbH's calculation methods and tools, the client's external logistics costs (e.g. transport, storage costs and services) can be analysed in detail and single cost drivers in the logistics process can be identified. The costs can be broken down as needed to part level or accumulated over certain periods.

On this basis, an economic evaluation of optimization by effecton Consulting GmbH for its clients is feasible in advance.

1.4.2. Comparable cycle time investigations for the assessment of process optimizations

Within a company, conceptual adjustments, organizational measures or the application of other technologies can lead to a streamlining of workflows. The evaluation of the personnel effect is carried out by effecton Consulting GmbH on the basis of cycle time investigations and, if possible, MTM analyses.

On this basis, decision-making regarding possible optimization measures for our customers is possible before implementation.

1.4.3. KANBAN Systems

KANBAN Systems are demand-oriented application systems (PULL-Systems), which, in certain framework conditions (e.g. constant need, small number of variants etc), are also suitable for a simple control of production plants. Advantages of KANBAN systems include the permanent visualisation of the current application situation and self-regulating function circuits which no longer need daily adjustment. The KANBAN systems need to be checked by the operator at regular intervals only and the parameters adjusted if necessary.

effecton Consulting GmbH designs specific KANBAN systems for its clients and provides support in the implementation process, by helping for example with equipment purchases or training of staff.

1.5. JIS / JIT Logistics

JIT (just in time) or JIS (just in sequence) are terms to describe the delivery of a product at the time required and in sequence. This form of delivery is applicable to components or assembly units for production with medium to high versions of numbers. It is easy to imagine that components, for example in several tens, hundreds or even more variants, cannot be presented at the assembly site itself. The components or assembly units therefore must be correspondingly commissioned in upstream logistics processes of the later production sequence and be delivered synchronously, or in other words, on time.

The production sequence itself is drawn up as late as possible in order to maintain flexibility and security in this procedure. The resulting budget and time, which is predominately tight, demands a very high standard with regard to the logistics process chain with this form of delivery.

For example, mistakes can quickly pass through in sequencing or at the delivery time and cause considerable downtimes and/or additional expenses in the production, and therefore high costs. In order to protect the supply chain, effecton Consulting GmbH makes use of special processes using modern poka-yoke procedures - in part with IT system support.

Even the subsequent delivery of components in the case of errors or damage in production presents a great challenge with this form of delivery. To keep disruptions in production to a minimum, effecton Consulting GmbH develops rapid reaction sub-processes.

effecton Consulting GmbH can fall back on several successfully implemented projects in this area for diverse OEMs in the automobile industry. It can develop and install processes for its clients that function reliably based on this knowledge.