



## DECOUPLING POINT ANALYSIS & LEAN ENABLE SPECTACULAR DELIVERY TIME REDUCTION

**Customer:**  
ebm-papst Mulfingen

**Project:**  
Inventory and delivery time  
optimization

The company ebm-papst in Mulfingen specializes in products in the areas air, refrigeration and air conditioning technology. Whether in industrial or private environments, everyone comes into contact with a variety of ebm-papst products – mostly without noticing it. In a typical German household, there are up to 20 products from ebm-papst hidden.

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## Achieve competitive advantages by drastically reducing delivery times

Since the market for air and air conditioning equipment is highly competitive, the management of ebm-papst in Mulfingen had a clear idea:

- Achieve a significant competitive advantage with drastically reduced delivery times
- Increase efficiency in the long term and sustainably
- Avoid missing parts and reduce excessive inventory

The first step was the introduction of various LEAN methods in production: waste was consistently eliminated and waiting times were reduced. Despite all efforts, however, there were regular situations where parts were missing in the final assembly. Where material was missing on the one hand, those responsible evaluated the

### ABOVE

The ebm-papst Group, a family-owned company with headquarters in Mulfingen, Baden-Württemberg, is the world's leading manufacturer of fans and drives. Since its foundation in 1963, the technology leader has set international market standards with its core competencies in engine technology, electronics, digitalization and aerodynamics. With over 20,000 products, ebm-papst offers tailor-made, energy-efficient and intelligent solutions for virtually every requirement in air and drive technology.

In the 2020/21 financial year, the hidden champion generated sales of 2.129 billion euros and employs almost 15,000 people at 29 production sites (including in Germany, China and the USA) and 51 sales locations worldwide.

Due to the stocks of available components were too high. Delivery performance was variable and product availability was not at the desired level.

### **Automatic decoupling point analysis leads to the elimination of superfluous inventory levels**

The benchmark for fan and drive solutions is set by ebm-papst in almost all sectors such as ventilation, air conditioning and refrigeration technology, heating technology, automotive, information technology, mechanical engineering and household appliances, intralogistics and medical technology.

[www.ebmpapst.com](http://www.ebmpapst.com)

To realize the mission to reduce lead time and delivery time, ebm-papst, together with the SCM consultancy Abels & Kemmner, is taking a “digital look” at availability problems at component level.

The “digital magnifying glass” in this case is a digital twin of ERP data, which can be used to quickly carry out a decoupling point analysis for ebm-papst. Desired delivery times for end devices to the customer were simulated. The result made it clear which components had to be kept in stock based on their in-house production time or delivery time.

On the other hand, this provided the correct information about when order-related components must be available.

As a further result of the decoupling point analysis, various storage levels could be eliminated in the course of process optimization. In addition, it became transparent at which storage levels, ebm-papst would have to reduce delivery times and in-house production times by 1 – 2 working days in order to streamline processes.

### **Correctly dimension safety stocks and adjust them dynamically**

For components that were classified as "in stock" according to the decoupling point analysis, the quality of the forecasts also had to be improved. This was done against the background of sensibly dimensioning the safety stocks at these levels in order to guarantee the targeted product availability.

Initial calculations showed that the measures could reduce component stocks by a total of around 28%. At the same time, the availability of components could be increased from the current 89% to a target value of around 98.5%.

Due to the evidently high potential for sustainable reduction of stocks and the fact that consumption is changing dynamically, ebm-papst is convinced that this type of calculation should be carried out regularly and that planning and forecasting parameters should be continuously adapted to the current market situation. It was therefore decided to continue using the software used to simulate A&K on a trial basis after the project was completed and to integrate it into the existing ebm-papst ERP landscape.

## **Abels & Kemmner makes SAP more intelligent**

At ebm-papst, the operational processing of production orders, purchase orders and customer orders is carried out using an ERP system from SAP. After examining forecast values and the planning and scheduling parameters provided by the simulation system, ebm-papst is committed to synchronizing the optimized parameter settings directly with the SAP system.

The existing planning runs and operational processing are thus supplied with "smarter data" and the SAP system is thus "automated and more intelligent". As is usual in this ERP performance management, data is exchanged daily, which means that changes and deviations are automatically detected.

## **Shifting flows of goods across factories present extra challenges**

The consultants from Abels & Kemmner recommended a central approach to inventory management. This is against the background that consumption shifts within the group or between plant locations. This central approach aims to summarize all material movements via a "virtual main plant".

As a result, the calculations and simulations provide optimized safety stocks for all materials in all plants. This includes both internal delivery times for relocations.

taken into account as the ratio of the consumption of a plant to the total consumption of a material. This means that all data per plant and month are automatically "up-to-date".

## **Adapting KPIs to new ways of working**

Together with ebm-papst, the consulting team developed new, suitable key performance indicators that made the quality of the processes transparent and measurable. The key performance indicators should also make it clear where it is worthwhile to work more "on the process rather than in the process".

Since the focus is on ebm-papst had shifted towards ensuring the availability of components, said goodbye ebm-papst consequently uses classic key figures such as "turnover rate".

Today, "availability" is the new key figure for control. To do this, a daily calculation is made as to which part of the required quantities of a component are covered by stocks. To ensure smooth production, availability and delivery reliability should be in the range of 99% or higher. Despite this ambitious goal, these values are usually achieved today by identifying supply gaps early and initiating appropriate measures in good time.

## **Improvements in product availability and inventory in the double-digit percentage range**

With the help of a decoupling point analysis and a successful pilot phase, the simulated and calculated improvements in product availability and inventory were achieved in the double-digit percentage range.

Reason enough for ebm-papst, to strive for further progress with the "intelligent planning logic" and the new-found transparency.

This is achieved by those responsible at ebm-papst now operates essentially on its own, thanks to a dedicated project team that has internalized the concepts and procedures to correctly configure the systems and solutions used.

Abels & Kemmner makes a valuable contribution to the collaboration beyond the project by exchanging experiences. With the implemented tools, ebm-papst can now test and implement logistical ideas and concepts almost independently.

