

Groundbreaking AI-powered production planning

Vacom: AI-based planning increases productivity by 10 percent

www.perfectpattern.de



PerfectPattern

Challenge

Manual planning is not feasible

Besides offering standard solutions, Vacom mainly produces customized components with very high vertical integration.

Kevin Mahler, Chief Operating Officer at Vacom, explains:

“Constantly changing geometries in production make the design of components a challenge. In addition, even the customers themselves often do not know what the final product should look like. This is quite different from serial production, which is common in the automotive industry, for example.”

At Vacom, an order typically involves about 20 operations. According to Mahler, manufacturing such a component easily requires a quarter of a year or more.

The production process depends on the availability of machines and components. The latter, for example, often must be sent to suppliers several times for special treatment of the surfaces.

Previously, five employees were only involved in planning the production process. They were simply overwhelmed with the planning and monitoring of around 2,000 production orders per month. Mahler recalls:

“In this case, **planning was impossible** - we could only estimate our delivery times. Not surprisingly, we often had problems delivering on time.”

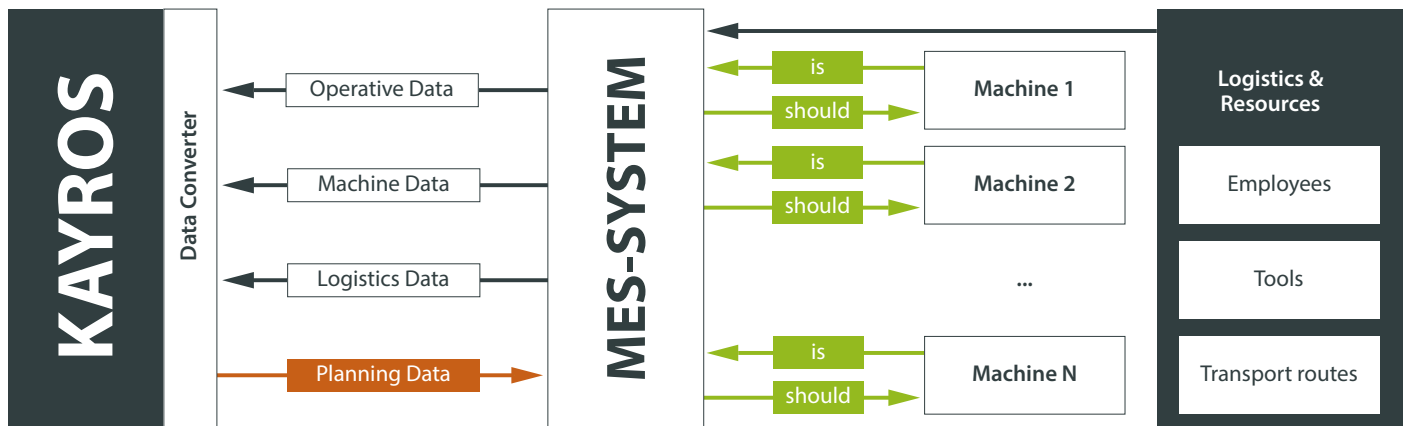
Solution

AI-based planning

Today, Vacom efficiently plans its production processes with an IT infrastructure consisting of SAP, Viadat warehouse management system from Viastore, and HYDRA manufacturing execution system (MES) from MPDV. The Advanced Planning and Scheduling System (APS) FEDRA included in the MES automates the complete production planning. For this purpose, it uses the AI technology KAYROS developed by PerfectPattern.

KAYROS models the sequence of tasks to be executed. In parallel, the software continuously calculates the current optimal production plan, **which guarantees maximum time and cost efficiency** in production.





KAYROS operating principle

Its flexible nature allows KAYROS to adapt dynamically to unforeseen events such as personnel or machine failures. These in turn are compensated for by rescheduling the production process.

Kevin Mahler outlines the process with KAYROS:

“The cognitive planning of KAYROS is ultimately responsible for assigning the machines to the individual tasks. After rough planning by SAP, the **AI takes over the final planning of all processes.**”

Kevin Mahler is proud: "We are the first company in eastern Germany to create a self-regulating factory, a smart factory. It organizes itself completely independently. Only when problems occur do humans have to intervene."

Vacom's employees first had to get used to the new setup. Mahler:

"At first, it was hard to let go - the team no longer had to plan everything by hand. Instead, they had to learn to trust the system. It's not that easy when you used to spend 80 percent of your day on planning."

Mahler continues: "In our production, there are no longer any discussion points about what to do where and when. It's no longer up to people to decide. This has increased our productivity and taken the pressure off the team. Also the stress of meeting deadlines has decreased significantly."

In addition, many employees at Vacom can now be assigned to more qualified and value-adding activities such as project management.

Outlook

Learning from experience

Despite the initial success, Kevin Mahler believes there is still much to be done: "We are still a long way from my understanding of AI. We already have a super-automated planning system that does many things. As a next step, we want to learn from the past to make better decisions for the future."

Mahler continues: "For example, if a component requires the milling machine 20 minutes longer than expected, the system should be able to adjust further planning independently. It would also be useful to automatically optimize setup times based on historical and current values."



Analyzing orders can help to improve workforce planning and development

By the very nature, some people are very familiar with certain activities and perform them faster than others. AI can assist in recognizing such skills. Equipped with this knowledge, companies can deploy employees more efficiently and promote internal knowledge transfer. This can help make workforce planning and development more individualized and targeted.

Kevin Mahler: “This would allow us to close gaps and increase the overall efficiency of processes that often cannot be captured with IT alone. There is still plenty of room for improvement, especially regarding upstream and downstream processes.”

Companies can overcome these and other challenges with the powerful AI solution [aivis](#) developed by PerfectPattern.



About Vacom

Vacom is one of the leading European suppliers of vacuum technology.

About PerfectPattern

PerfectPattern is a Munich-based AI-company that develops powerful AI solutions that make the world more prosperous and sustainable.

If you want to know more [visit us online](#) or reach out to info@perfectpattern.de