Phantasma Labs x Vectotax Software GmbH

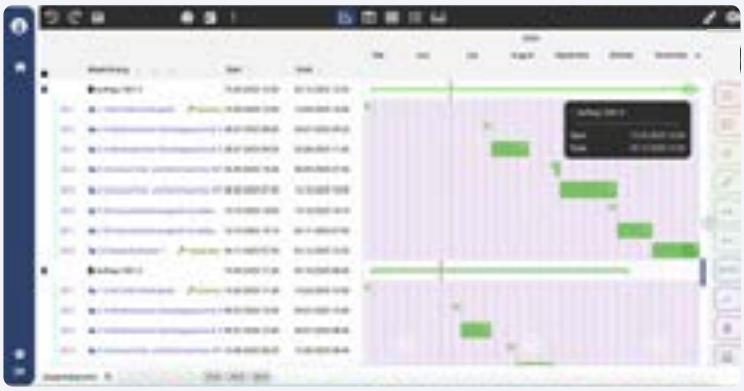
One Planning Board, Three Scheduling Modes

How ERP provider Vectotax partnered with Phantasma to integrate AI planning capabilities.

USE CASE STUDY | JUNE 2025

The enhanced Vectotax planning board enables users to generate production schedules within seconds, optimize for tight delivery dates, test alternative scenarios, and flexibly adjust AI-generated plans — all within a single, integrated tool.

One Planning Board, Three Scheduling Modes: Integrating AI Into Vectotax' Planning Board



Goals of the Collaboration:
Enable Planning Board Users to

- generate production schedules within seconds, regardless of complexity
- optimize processes for meeting tight due dates
- schedule with AI and easily adjust manually
- rapidly test different what if scenarios before executing

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One Planning Board, Three Scheduling Modes

A case study on integrating Phantama Labs' AI-powered scheduling into the Vectotax planning board, available across their ERP systems TaxMetall (on-premise), BusinessNow (cloud), and Planning Now, a standalone planning tool.

About This Use Case

In many small and mid-sized factories, production planning still relies on static tools such as Excel, rigid modules, and manual rescheduling. As a result, planners often face challenges when urgent changes, disruptions, or competing priorities occur.

To address this, German ERP provider Vectotax partnered with Phantasma Labs to enhance their modular planning board with AI-driven decision support. The enhanced planning board is available in three environments: as part of the on-premise ERP system TaxMetall, the cloud-based ERP BusinessNow, and the standalone planning tool Planning Now.

Across all three systems, users can switch flexibly between manual, automatic, and AI-supported scheduling modes. Built on Phantasma's proprietary Reinforcement Learning-based AI technology, the planning tools enable constraint-based production scheduling within seconds, optimization toward user-defined KPIs, and dynamic adaptation to real-world disruptions.

The result is a modernized planning environment that strengthens flexibility, reduces manual workload, and improves decision-making without requiring factories to restructure their existing systems, software or processes.

1 Why Modern Planning Matters

In many small and mid-sized manufacturing companies, production planning remains a manual, inflexible and often fragmented process. Planning teams rely on Excel sheets, legacy ERP interfaces, or individual experience to coordinate operations. While these methods may work in stable conditions, they tend to fall short when disruptions occur or when planning parameters change frequently.

Today's production environments are marked by shorter delivery cycles, more product variants, fluctuating resource availability and volatility in the supply chain. Planning teams must respond quickly to machine downtimes, staff absences, supply delays, and shifting customer priorities to ensure efficient factory operations and business continuity. Under these conditions, a reactive approach is no longer sufficient.

Traditional planning tools are typically not designed for this level of flexibility. They offer limited scenario analysis, lack transparency across constraints, and require significant manual input to adjust schedules. As a result, production plans are often either outdated by the time they are implemented or too rigid to respond to changes in real time.

To remain competitive, manufacturers increasingly need planning systems that are both structured and adaptable. Systems that provide a reliable baseline but also support dynamic updates and decision-making as soon as conditions shift.

This is the planning context that Vectotax and Phantasma Labs set out to address – by combining ERP-integrated planning workflows with intelligent, AI-based support for complex scheduling decisions.

2 The Partnership

Vectotax Software GmbH is a family-owned ERP provider based in Mülheim-Kärlich, Germany. With more than 30 years of experience in developing and implementing business software for small and mid-sized manufacturers, the company is known for its practical and modular ERP solutions. Their flagship product, TaxMetall, offers integrated modules for production planning, procurement, warehouse management, sales, and controlling.

As manufacturers increasingly demanded faster, more flexible planning capabilities, Vectotax decided to expand the options available within their ecosystem. They launched a new web-based standalone planning tool, Planning Now, as well as a cloud-based ERP tool, Business Now, while also enhancing the planning board embedded within their existing ERP system, TaxMetall (on-premise). Across all three solutions, the goal was to offer users three distinct scheduling modes: manual, automatic, and optional AI-supported planning. To realize the AI component, Vectotax partnered with Phantasma Labs, specializing in production planning built on Reinforcement Learning-based AI.

Rather than building a conventional optimization engine based on fixed rule sets or large historical datasets, Phantasma contributed an AI module that adapts flexibly to changing production scenarios. The result is an AI planning module that integrates seamlessly into the Vectotax planning board across different deployment environments, supporting planners without requiring a major shift in workflows. The collaboration between Vectotax and Phantasma focused on making advanced production scheduling accessible to manufacturers of all sizes – and doing so with minimal disruption to their existing IT landscape.

3 Collaborative Approach

The integration of Phantasma's AI into Vectotax's Planning Now module was shaped by close collaboration between both teams. After initial requirement workshops and discussions about planning goals, Phantasma Labs developed the AI scheduling logic to align with Vectotax's modular architecture.

The implementation process included multiple feedback and testing loops, during which real-world scheduling needs were refined into specific behaviors the AI should support. This iterative approach ensured that the result was not only technically sound, but also functionally relevant and easy to adopt for planners.

4 One Planning Board – Three Scheduling Modes

The planning board developed by Vectotax offers manufacturers three distinct planning modes within a unified system. Whether used as part of TaxMetall, BusinessNow, or as a standalone solution in PlanningNow, the interface provides the same structure and functionality across all environments. Planners can choose between:

1. Manual Planning

- Assignment of production tasks via drag-and-drop
- Clear visual overview with Gantt charts, multiple views, and timeline displays
- Group tasks by order or cost center to maintain full transparency

2. Automated Planning

- Plan forward or backward based on delivery deadlines
- Automatically detect capacity bottlenecks or resource conflicts
- Rule-based prioritization and workload balancing based on predefined planning logic

3. AI-Driven Planning (with Phantasma Labs)

- Seamless integration of advanced AI into the planning board
- Generate optimized, constraint-aware production schedules within seconds
- Forward and backward planning based on delivery dates or earliest possible start times
- Optimization of plans according to selectable goals, such as minimizing setup time, maximizing throughput, or improving delivery reliability
- Replan dynamically when conditions change – without losing key constraints (e.g., fixed production steps using the "freeze" function)

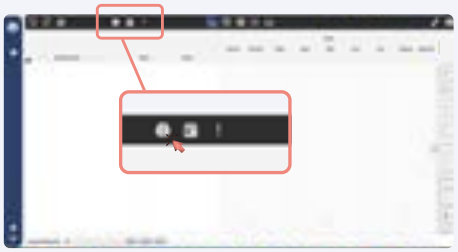
The AI module does not replace existing workflows but adds a new layer of decision support. Users remain in control and can activate AI support where it adds value, particularly when manual or rule-based scheduling reaches its limits.

One key feature developed in collaboration with Vectotax is the ability to "freeze" individual production orders within the schedule during replanning. For manufacturers working with external contractors or fixed delivery slots, this function ensures that critical appointments remain unchanged, even when the surrounding schedule is re-planned. By preserving fixed elements while dynamically adapting to changes, the AI provides real-world flexibility without sacrificing planning reliability.

Across all three systems, the planning experience remains consistent. Whether users access the planning board through TaxMetall, BusinessNow, or Planning Now, the underlying logic, interface structure, and optional AI capabilities are the same. This ensures a smooth transition for companies upgrading their planning processes at different stages of digital maturity.

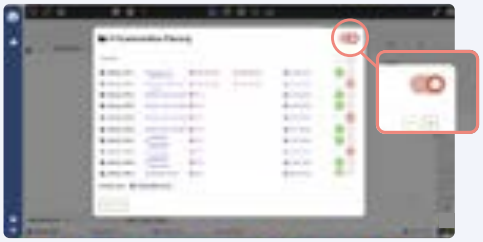
Integration of AI Features Into Existing Planning Board

1 New AI Planning Button



The **AI-supported planning mode** was integrated into the existing planning board by **adding a new button.** This allows users to switch between manual, automated and AI-driven planning and easily adjust schedules exactly as desired.

2 Choosing Orders to be Planned



To generate a new plan, orders to be included in the planning have to be chosen. The **button on the top right** allows users to **easily switch between automated and AI-driven planning modes.** Here, AI-driven planning is activated.

5 How the AI Works: Flexibility Instead of Fixed Rules

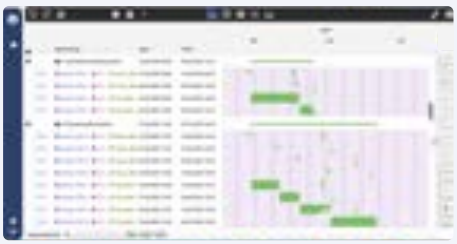
Traditional planning algorithms are typically built on fixed rule sets or historical data. The AI module integrated by Phantasma Labs follows a different approach. It is based on Reinforcement Learning, trained entirely in simulated production environments that model the real-world conditions of a manufacturing site.

The AI runs through tens of thousands of simulated planning scenarios, each with different constraints — machine availability, shift patterns, setup times, delivery deadlines, or material dependencies. In the process, it learns how to respond in the most efficient way to keep production running smoothly. Thanks to this simulation-based training, the AI can generate optimized schedules even in completely new situations — such as unusual order combinations, shift changes, machine breakdowns, or material shortages.

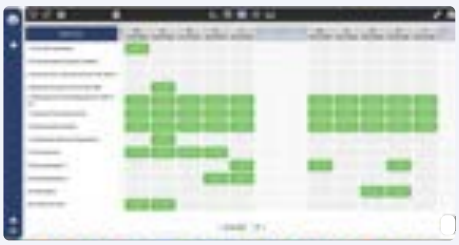
Instead of having to manually replan everything, planners can react with just a few clicks:

- Create an updated production plan in seconds, tailored to real-time conditions
- Quickly and easily compare different planning scenarios — with varying machine assignments, shift models, or order priorities
- Evaluate the impact of each schedule on your KPIs in real time, and choose the one that best fits your operational priorities

Schedule View by Machine or Work Station



Overview of Machine Utilization By Day



6 User Interface and Integration

The AI module is fully embedded into the existing Vectotax planning board interface. Whether users work with TaxMetall, BusinessNow, or PlanningNow, the AI-powered planning mode is available within a familiar environment. There's no need to switch systems or install additional platforms.

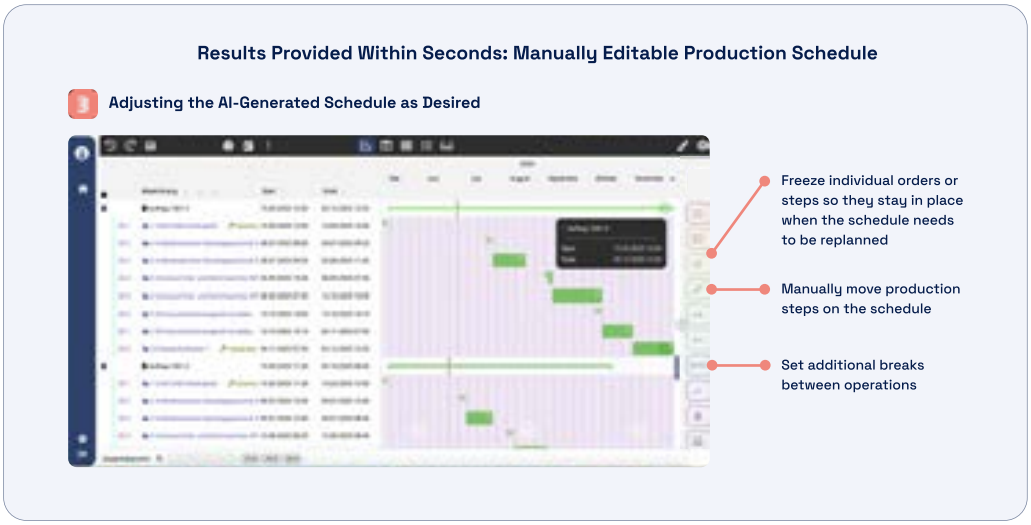
All three planning modes — manual, automated, and AI-driven — are accessible through the same interface. Users can activate the AI mode whenever it makes sense and continue working with the same visualizations, resource overviews, and assignment tools they already know.

All required data is drawn directly from the underlying ERP system, including order information, resource availability, machine constraints, and shift structures. The AI processes this data in the background and returns optimized schedules seamlessly within the existing planning board.

This approach ensures that:

- No additional onboarding or intensive retraining is required
- The transition from manual or automatic to AI-supported planning can happen gradually
- Users stay in full control of the planning process and can decide when and how AI support is used

By maintaining a consistent user experience across all deployment forms, Vectotax and Phantasma have made it easier for manufacturers to adopt advanced planning tools at their own pace, without facing the friction that often comes with introducing new technologies.



7 Result: User Benefits Enabled with Integrated AI Functions

The collaboration between Vectotax and Phantasma has significantly expanded the capabilities of Vectotax's planning solutions. For manufacturing companies, the integrated AI module opens up new possibilities for faster, more resilient, and more goal-oriented production planning.

Manufacturers using the enhanced planning board now benefit from:

- Optimized production schedules generated within seconds, based on real-time constraints and operational priorities
- Significant time savings in daily planning activities, reducing manual scheduling efforts by up to 70%
- Greater flexibility in responding to disruptions such as machine breakdowns, urgent orders, or resource changes
- Improved transparency across machines, resources, and planning alternatives, supporting faster and better-informed decision-making
- The ability to tailor operations to individual business needs, from minimizing setup times to maximizing throughput or consistently meeting delivery dates

Because the AI module works directly with the data already stored in the ERP system, manufacturers do not need large historical datasets or complex data engineering processes. This makes the solution particularly accessible for small and mid-sized companies that want to modernize their planning environment without overextending their resources.

By offering optional AI-supported planning alongside manual and automatic modes, Vectotax enables its customers to adopt advanced planning at their own speed, depending on their operational maturity and requirements. As Thorsten Bomm, Managing Director of Vectotax summarizes:

> With Phantasma's AI, we've expanded the capabilities of our ERP, giving manufacturers smarter planning tools that help them stay agile and competitive. Our customers now have access to real-time scheduling and KPI-driven decision-making, helping them optimize production without overhauling their existing setup.

The collaboration between Vectotax and Phantasma Labs proves that even small and mid-sized manufacturers can take advantage of advanced planning optimization without requiring major system changes, large datasets, or disruptive implementations. Planning Now, TaxMetall, and BusinessNow now offer a practical pathway for companies that want to modernize their production scheduling, improve operational resilience, and create more stable, predictable processes.

Got Curious?

Curious to see what AI-powered planning looks like in practice? Whether you're looking to optimize your own production processes or exploring AI integration as an ERP or MES provider — we're happy to talk!

In a short, no-pressure conversation, we can answer your questions about AI in production planning, outline possible next steps, and, if you like, give you a first look at our AI-powered planning solution in a compact live demo.

If you're interested in one of Vectotax's solutions, feel free to reach out to our team as well. We'd love to hear from you!

More Information on our Website

Schedule an Appointment

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