

How the European Active Pharmaceutical Ingredient (API) Provider Maximized Productivity at Its Large-Scale Production Plant by Using Bodhee Production Scheduler



Summary/Synopsis





Neewee's AI manufacturing Application for generating event-driven production schedules increased productivity for an API solutions provider in Europe. Bodhee Production Scheduler enabled optimum capacity utilization and facilitated a data-driven, system-wide synchronized production.

Project Background

The client is a European pharmaceutical company and a world giant providing Active Pharmaceutical Ingredients (API). It owns a large-scale commercial production facility that houses different autonomous production units. There are many buildings in each APU utilizing a combination of equipment lines and areas for the final processing of various products. The company needed to scale the site for optimizing schedules and maximizing capacity utilization within the existing resource pool.

The Objectives of the Project

The objective was to maximize capacity utilization by

-  flexible production planning
-  overcoming bottlenecks and keeping WIP levels at the minimum
-  optimizing resource and assets management
-  tracking production progression and providing recommendations in real-time



Based on the demand figures received from the Sales projections, the production planners needed to generate an annual production schedule. However, accommodating any sudden change in demand, such as prioritizing certain products in a particular month or adjusting production in response to events on the shop floor and manually recreating the plan, was a challenging task. Developing an agile scheduling system was essential for the optimization of capacity utilization.

How Neewee Solved the Business Problems:

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- Bodhee Production Scheduler enabled an integrated approach to real-time event-based production planning.
- Bodhee Production Scheduler helped enhance their existing macro scheduling deployed for the long-term by closely aligning with day-to-day production events.
- Micro inputs on LIVE production status, such as asset downtime, resource availability, etc., were provided.
- The Control Tower approach to the workflow data kept their decision-making in sync with shop-floor realities.

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- Online production Gantt charts gave accurate data and calculation of actual process efficiencies, existing inventory, batch cycle times, etc., which helped forecast the process outcome.
- When unexpected changes in demand or resources cropped up, our app sent alerts to the planning, supply chain, and manufacturing teams.
- Actionable insights and timely recommendations from the app helped avoid bottlenecks and minimize the buffer stock or WIP. It also allowed the production teams to define new objectives, influencing parameters and constraints as and when required.
- Generation of updated plan ensured maximum productivity.

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- As our AI app allowed the data items to be uploaded in standard excel templates, consolidating all historical and current production data became easier.
- Moreover, acquiring data got simplified because the AI app was enabled for integration with the existing ERP system.
- Integrated data analytics provided a clear picture of the various production plans and enabled batch monitoring in real-time.

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- By providing an end-to-end view of the upstream and downstream activities, Neewee's AI App facilitated the creation of customized production plans.
- Simulation of not only one but multiple versions of the production plan based on constraints, manufacturing goals, and resource utilization became possible.
- Production planners could then publish the version that promised best results for optimum capacity utilization.

Business Benefits and Positive Impact Post Deployment of Neewee AI Solution

Thus, our **Bodhee Production Scheduler** optimized the client's manufacturing processes with harmonized data and flexible production scheduling. Development of the AI-powered Control Tower digital tool enabled synchronized production planning.

Synchronized production planning with Neewee's specialized ML algorithms and AI app impacted productivity within 8-12 weeks of deployment.



AI-enabled Real-time batch monitoring and comparison visualized actual process efficiencies, not theoretical or hypothetical scenarios.



Timely forecasting, actionable insights and recommendations reduced WIP.



Minimizing WIP reduced working capital and made the production cost-effective



Batch cycle time got reduced by the removal of hidden buffers.



Flexible production scheduling helped meet manufacturing goals.



Optimum capacity utilization increased productivity