

Tecnomatix

Paulaner

Use of Tecnomatix enables premier brewer to efficiently expand business

Industry

Food and beverage

Business challenges

Determine the right dimensions of components for the brewery

Invest in the right equipment

Develop feasible and robust production plans

Keys to success

Secure product quality with a stable and harmonized production flow

Compare alternative maintenance strategies

Identify and fix bottlenecks

Results

Developed optimal strategies to fulfill customer demand

Understood the consequences of different sequencing strategies

Realized limits of the planned brewery for future products and demands

Secured product quality

Plant Simulation provides Paulaner with key planning tool for new brewery

Finding the right balance

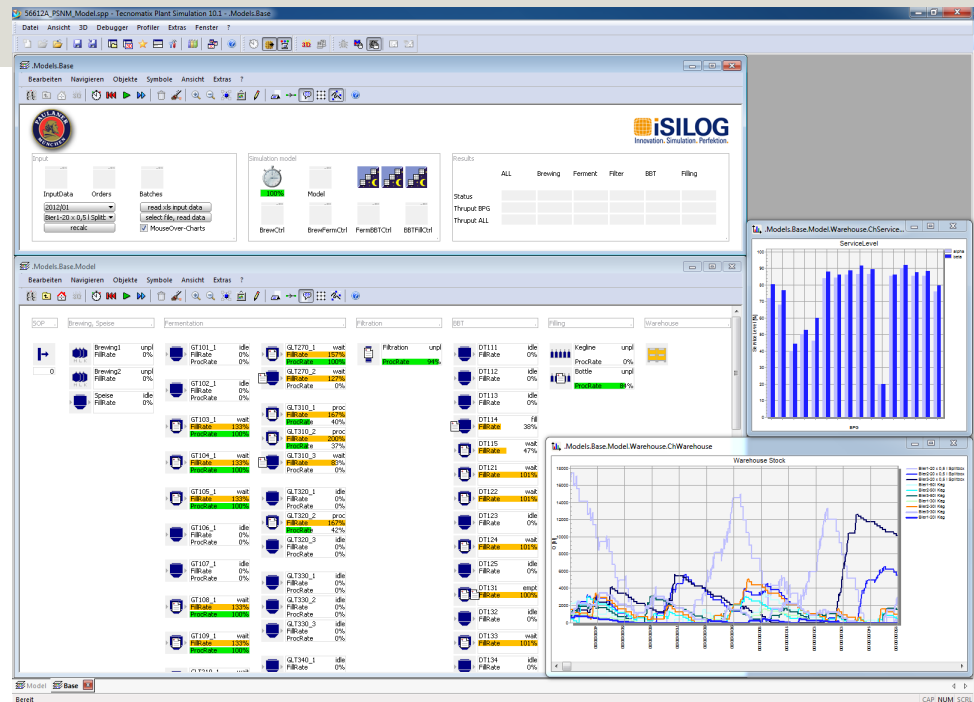
There are a number of factors that have to be taken into an account when engineering a brewery, including seasonal demand, product turnover, the flexibility to produce new products and multi-variety packs, and quality and freshness. It takes highly automated and sophisticated technologies and expensive equipment to effectively manage these factors, so it is particularly important to ensure that processes can meet current and future requirements.

To meet this goal, simulation is the tool of choice to implement fully validated processes that are "right the first time." By using simulation, the brewer can determine the most cost-effective and future-proof planning solutions. Alternate planning scenarios can be compared to select the best balance between performance, flexibility and cost. By using simulation, it is easy to identify bottlenecks and plan the best strategy for profitably meeting customer demand.

Optimizing systems and processes

The first official mention of Paulaner Brewery on 24 February 1634 is the brewery's foundation date, and since then Paulaner Brewery has been a permanent part of the culture, tradition and history of Munich. The popularity of the Paulaner beer has always went well beyond the bor-





ders of Munich. This is especially true of Paulaner Hefeweißbier, which today is one of the most popular beers in the world. More than two million hectolitres leave the brewery every year for more than 70 countries.

Unfortunately, there is no room to expand at the current Paulaner production site, and even if there were, the nearby transportation connections are inadequate to accommodate an increased volume of product. To enable the company to grow, Paulaner started planning a new brewery on the outskirts of Munich.

To facilitate the building of a state-of-the-art brewery, iSILOG, a leading simulation service provider, provided a solution for the beverage industry using the Plant Simulation solution in the Tecnomatix® portfolio from Siemens PLM Software. The solution includes brewery-specific objects, such as the brew house, fermentation tanks, filters, bright beer tanks (BBT), filling lines and storage. Using these objects makes it easy to investigate the production process and to evaluate different planning strategies and scenarios.

Evaluating performance

The input data of the simulation model is defined in a spreadsheet program. Structured into different registers, there are inputs for customer demand and properties of the process steps (brewery, fermentation, filter, BBT, filling, warehouse). Using additional registers, it is possible to define the tank capacities (number, size), availability of filling lines and shift calendars for several process steps.

Paulaner can use this application without the detailed knowledge of how to create a simulation model; it is only required to define the input data in the spreadsheets. After import into Plant Simulation, the components of the model are generated and configured automatically according to the input data. This makes the solution easy to use and creates the opportunity to effectively investigate many different scenarios in a short time period. The solution provides many different key performance indicators to evaluate the performance of the brewery.

Using this solution, Paulaner is able to evaluate the influence of stochastic process behavior (consumer demand, breakdowns, etc.) and to confirm that they are making the right investment in tanks and equipment.

Solutions/Services

Tecnomatix
www.siemens.com/tecnomatix

Customer's primary business

The Paulaner Brewery was founded in 1634 in Munich, Germany. Today, Paulaner produces about 2.4 million barrels or almost 74 million gallons of beer annually. It is one of six breweries that provide beer for Oktoberfest, the German beer festival dating back to 1810.

www.paulaner.com

Customer location

Munich
Germany

Partner

iSILOG GmbH
Rheinstraße 219
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Meeting key challenges

Paulaner's objectives for the project were to continue to improve key performance indicators, including heat requirements, power consumption, water consumption and extract loss; implement environmentally-friendly energy concepts; and ensure that processes, workflows and capacities are balanced and optimized.

Using Plant Simulation, Paulaner was able to get a grasp on a number of key issues. These included determining existing bottlenecks; developing best strategies, such as cleaning, changeovers, batch sizes, production planning and control, to fulfill customer demand; understanding the limits of the new planned brewery regarding

expected future products and demands; establishing the best approach for harmonizing customer demand, incoming goods, batch sizes and packaging lines; and understanding the performance of different sequencing strategies as a function of product mix and quantity.

In complex systems with large interdependencies such as in beer production plants, it is nearly impossible to manually estimate how the system will perform. The use of Plant Simulation technology makes the effective management of such interdependencies a reality. Having proven its value, Paulaner considers Plant Simulation to be an essential planning tool for its current and future success.

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Siemens Industry Software

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www.siemens.com/plm

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