

YOKU MOKU CREA Co., Ltd., is the central manufacturing subsidiary of the Japanese confectionery brand YOKU MOKU Group, producing the group's most important and popular product lines.

Location: APAC

Use Cases: Logistics, Production Planning, Operations

Website: www.yokumoku.co.jp

Results

- Reduced annual work hours at each factory by approximately 600 hours
- Lead times for creating initial production plans reduced from 2-3 weeks to just one day



Optimizing Daily Production: How YOKU MOKU CREA CO., LTD. Transformed Operations with Gurobi

With Gurobi, YOKU MOKU CREA has transformed their daily production planning and saved hundreds of hours thanks to the automation of previously manual calculations.

YOKU MOKU is a Japanese confectionery brand with a 55-year history operating in Japan and around the world. Founded in 1969, YOKU MOKU CREA Co., Ltd. is the central manufacturing subsidiary of the YOKU MOKU Group, responsible for production of the group's most important and popular product lines.

Operating three facilities across Nikko, Kanuma, and Tokyo, the company produces approximately 150 different confectioneries, amounting to roughly 350 million pieces annually.

Managing this scale of production is no easy task. As daily production planning became a critical challenge for the company, YOKU MOKU sought an optimization solver that could help them manage costs while maximizing output.

Manual Processes Leave Less Time for Strategic Planning

YOKU MOKU CREA's production process involves 32 production lines running under a two-shift system to create roughly 500 different final products. As the demand for their confectioneries has grown, so has the complexity of their daily production planning.

The company must manage production volumes, adhere to tight deadlines, balance loads across factories, and maximize operations—all while responding flexibly to frequent changes in sales plans and demand forecasts.

Until recently, this intricate planning was largely handled through manual processes, relying heavily on the expertise and experience of a small group of skilled personnel.

As a result, YOKU MOKU CREA faced multiple challenges: dependency on specific individuals, a shortage of successors, and a lack of bandwidth to take on critical strategic tasks.

Rising production costs and the urgent need for cost management exacerbated the urgency of the situation, yet key personnel remained occupied with time-consuming manual planning.

Systematizing Daily Production Planning

YOKU MOKU CREA understood that systematizing daily production planning was crucial to overcoming these challenges. They needed a solution that could not only streamline decision-making and eliminate human error, but also enable the company to quickly adapt to changes in production demand.

Initially, the company sought to improve their existing Excel-based system, which was already familiar to planners. However, it soon became clear that this approach would introduce new issues related to complex formulas and macros.

While packaged software was also considered, none of the available solutions could fully satisfy the company's unique requirements. Customization of those solutions would incur substantial costs and time.

Ultimately, YOKU MOKU CREA decided to develop a customized system powered by Gurobi. This approach provided a flexible, scalable solution tailored to their specific needs. The expertise of October Sky Co., Ltd. (Gurobi Optimization Japan) in building optimization systems across



various industries also played a key role in their decision.

Optimized Solutions for Streamlined Planning and Strategic Focus

The implementation of Gurobi brought significant improvements to YOKU MOKU CREA's daily production planning and overall operations.

Enhanced Production Planning Efficiency

By centralizing decision-making within the production management department of the head office, which oversees all factory operations, the company is now able to make swift, company-wide decisions. The standardization of tasks eliminated the reliance on specific personnel, allowing anyone in the team to generate consistent, high-quality production plans. Notably, this transition reduced annual work hours at each factory by approximately 600 hours thanks to the automation of previously manual calculations and adjustments.

Additionally, lead times for creating initial production plans were reduced from two or three weeks to just one day. This newfound flexibility enabled the company to adapt quickly to changes in market demand and unexpected events.

Renewed Focus on Strategic Tasks

The efficiency improvements generated by Gurobi freed up valuable resources that can now be redirected toward more strategic initiatives, such as cost management. This shift has allowed for deeper analysis, more long-term planning, and a proactive approach to managing production costs, which

had been a growing concern for the company.

Overcoming Implementation Challenges

One major challenge that YOKU MOKU CREA faced during the testing phase of the new system's implementation was the difficulty of defining requirements. In building a system based on mathematical optimization technology, it was crucial to clearly define objectives and constraints, and to understand the tasks that were previously carried out manually through an optimization lens. In addition, several bugs were discovered before the system went into full operation.

Since multiple objectives and constraints were involved, identifying problems was difficult, but prompt action was taken by reviewing requirements, simplifying data, and checking error logs.

Furthermore, it was necessary to address changes in the skills required for planning tasks. As the tasks shifted from creating plans to verifying and modifying the results, new skills were required for creating new input data formats. Although new training was needed for employees, the swift support provided by October Sky Co., Ltd., combined with internal efforts to address new challenges, ensured appropriate responses.

Looking Forward: An Optimized Future

Using Gurobi's solver, YOKU MOKU CREA has been able to not only resolve their immediate production planning challenges, but also lay the groundwork for future innovation.

The company now plans to explore the use of Gurobi in other production areas, such as monthly production

planning and personnel allocation during production execution.

Furthermore, YOKU MOKU CREA is considering the expansion of optimization to inventory and raw material procurement, further strengthening their operational efficiency and adaptability.

"Leveraging Gurobi's solver, YOKU MOKU CREA has built a foundation for innovation that goes beyond addressing immediate production planning challenges," says Hiroki Anzai, Production Department Manager at YOKU MOKU CREA. "We are actively exploring additional applications of Gurobi in diverse production areas—from monthly production planning to workforce allocation—to enhance our operational efficiency and adaptability to change. By integrating Gurobi with AI and other advanced technologies, we aim to create a truly flexible and sustainable future grounded in optimization."

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