



LIXIL Corporation

The project of improving productivity fabricators in the front sash business

Purpose of the Project

- This project aims to demonstrate the effectiveness of a production management system that handles everything from picking out materials necessary for production to outputting processing information to improve productivity for processing stores to which we outsource sash processing and manufacturing.
- We cooperate with Schüco Digital to develop the system. The system can provide data specialized for sash production, is not available in existing systems in Japan, and will greatly contribute to improving the productivity of small and medium-sized enterprises.
- Many contract processing stores are having troubles in passing on skills and training to younger workers due to labor shortages and aging society, and there is a growing need to improve productivity through digital transformation.
- Generally, necessary materials and processing information have been manually picked up from catalogs based on architectural drawings, but with a system to automatically generate a series of processes and reduce work time, we aim to improve productivity and expand production capacity.



Details of Demonstration

- In collaboration with Schüco Digital, we are currently developing "SashDesign," a customized version of their owned "SchüCal," an integrated system from drafting to exporting processing information specialized for sash production. A scheme for system operation is under construction in cooperation with Schüco Japan, which will provide intermediary support to licensed stores.
- The project set January 2025 as the date for the effectiveness verification, and by December 2024, we proceeded with the system setup development of the fixture varieties necessary for the verification.
- The actual working time for each process, from [A. Simple drawings] → [B. Parts selection] → [C. Creation of separate drawings (processing drawings)] → [D. NC program], was calculated assuming that the verification model fittings will be the ones to be used in an actual property. A comparative analysis was conducted by three processing shops using three methods: (1) conventional "manual picking," without using any system, (2) the existing simple system, and (3) SchüCal, to verify whether the use of SchüCal could be a solution that contributes to improving productivity.



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Project Outcome

■ Comparing the average time taken for three processing shops to complete the main processes [A] to [D] using methods (1), (2) and (3), it was 417 minutes for (1) manual picking, 377 minutes for (2) the existing simplified system (90% of manual picking), and 305 minutes for (3) SchüCal (73% of manual picking). Regarding the trends of each method, while (1) manual picking does not require simplified drawing, in (2) and (3) where either of systems is used, the process [B] Parts selection can be completed in about 25% of the time. Although it takes time to create the initial model drawing, we consider it a great advantage of the system that the parts selection can automatically be completed. In addition, compared with (2) the existing simplified system and (3) SchüCal, SchüCal can pick up numbers efficiently from the drawing representation, which is thought to be a factor in further reducing time in the following processes of processing drawing and NC program. As a result, it was demonstrated that of the three methods, (3) SchüCal required the least amount of time and was proven to improve production efficiency by approximately 30% compared to (1) manual picking.

Challenges and Solutions

■ In this project, SchüCal is also system-based, from simple drawings to separate drawings (processing drawings), and it is expected to improve production efficiency by about 30% compared to the conventional manual method. However, data entry into the NC (automatic lathe) is done manually, and the NC integration is an issue in maximizing production efficiency. There are currently two possible solutions to this issue.
Option 1: Provides a compatible Schüco NC as a package.
Option 2: Develops and provides a solution that allows SchüCal to be integrated with NCs available in Japan.

Future Plans

■ We will continue to develop the system and will begin recruiting SchüCal licensed franchisees in April 2025. Fixed monthly license fees will be collected from franchisees, that will cover ongoing system maintenance and updates. We believe that the source of revenue will be increased sales through expansion of production capacity at processing stores and we will continue to promote our activities with the goal of providing an environment in which the processing store industry can thrive and operate sustainably.