

Bespoke development case studies



Fully integrated production planning system

The requirement

Custom Made Kitchens (CMK) of Thorne, near Doncaster, is a leading UK supplier of kitchen and bedroom cabinets in both standard and bespoke designs and sizes. By 2005 however CMK had come to realize that market success had come at a price.

A growing proportion of the order book was for non-standard units and programming these units for the saws, drilling and routing machines was gradually absorbing more and more management time. For Keith Hackshall, the production director, holidays had become a distant memory.

The company had tried a number of standard software solutions but the systems that they identified fell short of the level of automation that they were seeking. The sticking point always seemed to be the handling of the non-standard units. A fully bespoke system was seen as a risky and potentially expensive alternative. Finally, CMK decided to develop a hybrid system that combined CMK's existing order taking software with modules from the SECANT cut planning package from PSL Optimization Software Ltd.

The solution

The first step was to analyze the nature of the special units. Rules needed to be established governing the components required, the dimensions of these components and the drilling and routing codes needed to manufacture them. These rules were generalized as far as possible so that two non-standard units of the same broad design that only differed in size could use the same rule set. This analysis resulted in a computer model capable of extracting the component parts for both the current range of special units and for further variations that might be required in the future.

This model formed the backbone of the new system. All orders could now be exploded to create:

- bill of material lists
- accurate cutting lists for the saws and
- control strings for the drilling and routing machines.

The result

The benefits were immediate. Management staff were no longer involved in the mechanics of order processing. Errors in production - almost unavoidable when manually programming each special unit - were all but eliminated.

With full automation of order taking in place it became possible to rationalize the whole production planning process. Cutting pattern optimization was fully integrated with the new order taking and parts explosion system. Cutting patterns and material usage were calculated automatically as soon as an order was confirmed by the sales department. At any point in time the material required to satisfy the current order book was available to stock control. The risk of over-purchasing of stock was minimized. The introduction of a state of the art optimizer also brought improvements in yield and in the throughput of the saws. Work that used to take ten machine cycles now typically required no more than seven.

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For production staff the new system increased their control over the scheduling of the workload. They could now easily identify opportunities where batching of similar orders would improve the utilization of the saw without compromising delivery dates. Re-planning the cutting patterns was fast and accurate.

According to Keith Hackshall, the key to the success of the project was its evolutionary pace. “At each stage we knew the changes provided immediate benefits to us and could be managed without compromising production. In embarking on the project we were looking for savings in man-time and this has been delivered throughout the business. The improvements in cutting efficiency are a welcome bonus.”

Rodney King, who managed the project for PSL, pointed out “The big advantage was being able to break into the problem gently, without creating a mountain of extra work for management. We simply proved the concept with CMK, and then worked our way through the details in stages.”

About PSL

PSL is a specialized software house that has been developing advanced systems for the manufacturing and distribution industries for almost 20 years. We work closely with our clients to ensure that our solutions meet their requirements. This close working relationship means we have worked with many of our clients for over a decade, delivering ongoing cost-savings to their business.

We provide consultancy and bespoke development to clients all over the world, from major international organizations to small start-up ventures, both on our own and in collaboration with other experts.

If you have any enquiries about how PSL can help you in your business please don't hesitate to contact us.

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