

## Batchelors Foods Reduce supply chain costs whilst improving efficiency



Batchelors Foods uses WITNESS simulation software from the Lanner Group to modify supply chains and improve efficiency

### Background

An advanced business simulation tool from Lanner has been used by Batchelors Foods (part of Campbell Grocery Products Ltd.) to ensure that a planned change to their supply chain would not be compromised by an adverse impact on inventory and customer service levels. The tool has helped to justify the planned changes by quantifying their overall cost/benefit and by identifying the requirement for associated operational improvements. The market for canned vegetables, coupled with improved forecasts, has seen more stability in the recent past. Batchelors Foods has traditionally met the demand for canned vegetable products through the operation of two independent canning lines—one dedicated to a single can size, the other handling a mix of two sizes.

A recent review of the production requirement for canned products concluded that a more efficient, responsive single line would not only offer substantial cost savings for the existing business, but would also position the cannery to handle a wider range of canned products. Prior to the planned change, the two lines operated on a five-day, three-shift week with one line dedicated to a single can size and the other handling a mix of two sizes. It was planned to retain both lines but staff just one at any given time. This allowed an otherwise extended size changeover to be accommodated at weekends, thereby enhancing capacity. It also retained the option to reinstate capacity should the need arise. However, it did not permit maintenance or depreciation savings to be realised. In the longer term, the option to decommission or redeploy the second line was open to consideration.

### Related Product



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Management raised concerns that:

1. a single line cannery would not have sufficient capacity to handle the known seasonality in demand
2. the impact on inventory levels would be excessive, leading to much reduced cost savings

The WITNESS-based Supply Chain Dynamics Model developed by Lanner addresses manufacturing run strategy issues by quantifying the trade-offs between stock costs and production constraints. Using the model, it has been possible to show that viable single line running can be achieved through a combination of production efficiency improvements, changeover time reductions and run strategy revision. Further, the model has been able to indicate the sequence of performance improvement steps required.

Initial results from the model suggested that at the previous levels of production efficiency, moving to alternate line working would result in unacceptable loss of service level due to capacity constraints. However, further analysis with the model helped to identify the required level of production efficiency that would enable alternate line running to become viable. The model also indicated that inventory would increase by approximately one weeks cover. However, the costs associated with this would be more than offset by the savings in labour costs that would then be available.

Moving to a true single-line cannery will incur a substantial increase in time lost to can size changeovers. These have hitherto been largely accommodated at weekends. The model examined a range of scenarios involving varying changeover durations. The conclusion was that substantial reductions in the original anticipated changeover duration would be needed before single line running could be contemplated.

As a result, alternative run strategies were also examined—seeking to reduce the frequency of major changeovers. The model demonstrated that increasing the make cycle for certain lower volume products (and accepting the resultant inventory increase for these products) was more than offset by the enhanced capacity gained on the line. Overall, inventory decreased and service level returned to an acceptable value. This would make the strategy viable and allow line 2 to be decommissioned if desired.

Finally, an alternative, more radical, approach to the question of reducing lost time due to changeovers was considered. The major cause of lost time due to changeovers is setting up for differing can diameters, rather than differing heights. It therefore follows that major savings could be made in inventory costs (both finished product and bright cans and lids) and substantial efficiency improvements won on the canning line. However, the market would have to be persuaded to accept a revised range of can sizes (that is, a single can diameter with height variations). This is, of course, an entirely separate business issue.

## Results

The use of the model has enabled Campbell's to quantify the value and sequence of performance improvements enabling the planned cost reductions to be realised. It has also allowed the factory to identify and quantify innovative solutions to business issues and remains available to evaluate new scenarios as the business environment changes.