

MCP CASE STUDY - Food



Aunt Bessies: Food Group finds the perfect flavor combination with Preactor and QAD

Part of the William Jackson Food Group, a family business since 1851, the Aunt Bessie's brand is fast growing and hugely popular with more than half of UK households buying its products every year. Launched in 1995, Aunt Bessie's currently produces over 20 million Yorkshire Puddings alone per week at the company's Hull facility. In addition to Yorkshire Puddings, Aunt Bessie's supplies all the major food multiples with a wide range of frozen and fresh sweet and savoury products in a variety of serving sizes.

Planning and scheduling is a vital ingredient when producing for household names on such a scale, which is why Aunt Bessie's chose to invest in a winning partnership of Preactor APS and QAD ERP.

While the products that the company makes are not complex in and of themselves, their sheer scale and variety combined with a high seasonality of demand create a significant interconnected series of challenges. Starting with raw ingredients such as oil and flour, these are all held on site and ordered in bulk

but used at very different rates, depending on seasonality. For example, a 20 tonne container of oil may last up to 2 weeks in quieter periods yet need replacing after only 2 days in busier times. Packaging materials such as cartons, film and outer wrappings are of course subject to the same seasonality but these are held in a small holding store and then brought in on a day before basis.

Other ingredients such as defrosted fruits are called in as and when required. Aunt Bessie's operates on a 'produce on Day 1 for delivery on Day 2' basis but given that a significant percentage of the company's products are frozen, it makes use of a 3rd party warehousing facility to maintain 3 weeks of stock across its product range to help smooth supply. In terms of actual production, Aunt Bessie's is split into 2 zones. Zone 1 is dedicated to Yorkshire Puddings, Pancakes and Toad-in-the-Hole production and comprises 3 static and 2 gyro lines. In its simplest frozen form, the raw ingredients are deposited onto an appropriate tray before

Company and product

Aunt Bessies produces all the major food multiples with a wide range of frozen and fresh sweet and savoury products in a variety of serving sizes.

Key challenges

- There is a 12 week window in which to make and sell exactly the right amount of product.
- Balance inventory management with smoothness and efficiency of production
- Batching as many orders together instead of making many smaller orders

Key Benefits

- Clarity of Gantt chart increased efficiency of the changeover matrix and the optimal sequencing of orders
- Increased visibility from Preactor has also helped to respond quicker in a number of ways, especially when a problem occurred on a line.
- Immediately amend what stock is/isn't needed to move into short-term holding area thus minimising costs and optimising space.

System architecture

QAD ERP

being packaged and wrapped. Where items need to be baked, the raw ingredients are baked and then packed before being frozen (if required) and dispatched.

Zone 2 is much more complex and while it only handles 20% of the product range, it creates 80% of the difficulties. This is largely due to the variety of potential products made here – from stuffing and dumplings to pies and crumbles – and the compatibility (or not) of these products being able to be made at the same time.

Chris Buckle is Supply Planning Manager at Aunt Bessie's and he outlines the crux of the company's planning and scheduling challenges.

"At the heart of our business is the need to balance inventory management with smoothness and efficiency of production. Each has significant cost implications if we get it wrong."

He goes on to explain why this is the case. *"When it comes to inventory, most of our products have a 12 month shelf life yet the major multiples will only accept products with at least 9 months shelf life remaining. In reality this means we have a 12 week window in which to make and sell exactly the right amount of product. If we make too much it leaves us with product we either have to discount or discard. If we make too little then the customer goes without. Ideally we need therefore to work on a Just in Time (JIT) basis. However, to get the best from our production facilities we need a smooth flow of product through the factory which ideally means batching as many orders together instead of making many smaller orders."*

This is not just down to managing complex setup, clean down and change over times but because many products cannot physically be produced at the same time. For example, large lemon meringue pies cannot be run at the same time as smaller "for two" versions of the same product. Apples & Custard "for two"

versions cannot for example be run at the same time as any other "for two" versions of any other product.

Buckle again, *"This scenario is repeated time and time again so in many cases it can take a huge amount of time just to work out what product is actually compatible with another while also taking into account the peaks and troughs of our seasonal demand, shelf life of raw materials, and accuracy of the final amount of product we actually need to make."*

It's not just production capacity that needs to be most efficiently used, the company's 180 strong workforce also needs to be effectively managed. Too much work overloads the company's human resources just as much its ovens and other plant resource while a prolonged quiet period can leave people with little or no work to do. Unsurprisingly, forecasting, planning and scheduling are at the heart of Aunt Bessie's business. The company uses Futuremaster for its long term forecasting solution which gives a rolling 12 month forecast based on historical sales and consistently reviewed data from sales promotions. This is updated on a monthly basis. Prior to investing in Preactor, mid to short term planning was handled by a combination of the company's aging SKEP planning system and MFG Pro Enterprise Resource Planning (ERP) system. Buckle describes the planning capabilities of SKEP as very straight forward showing at best a crude weekly plan. *"Not only did we have to manually work out the detailed daily planning information, we had to manually enter this into the ERP system, and then enter it into a huge planning spreadsheet as well as the weekly plan. In addition to this being a very time consuming process, we were left with no real visibility of what was actually happening with actual production versus the manually projected plan."* This meant if a problem did occur, the company wouldn't know about it until the following day when it would have to

react to a day old problem along with all the knock-on effects this had created.

Aunt Bessie's was already growing concerned about the age, reliability and unwieldiness of its SKEP system when a decision was taken to replace its existing ERP system with a more modern QAD solution. Buckle again, *"This was a key driver for us towards Preactor because in addition to worries about the consequence of a system failure with SKEP, we wanted a modern planning and scheduling solution that would work smoothly with QAD."* A visit to a sister company, Ardo Foods – a long time Preactor user, confirmed the fact that Preactor had all the functionality Aunt Bessie's required. *"We were very impressed by what we saw – especially the clarity of the Gantt charts, the efficiency of the changeover matrix and the optimal sequencing of orders. We also saw the positive impact Preactor had on the company in enabling the previously distinct areas of production and storage to work much closer together which benefited the company as a whole."*

A decision to invest in Preactor and work with long established Preactor partner Kudos Solutions was therefore taken with implementation beginning in 2010 alongside the company's QAD system. This involved Buckle creating a master database by SKU which identified a range of factors including parent child groups, speed of production, the number of people required to run the line, and the best running pattern – i.e. which products will it run/not run with. After this was fed into Preactor, Buckle then worked closely with Jeff Johnson of Kudos to map out exactly how each line was planned. One of the biggest problems Kudos had to work on was preventing Preactor from becoming overloaded when back filling by volume, an essential requirement that allows Aunt Bessie's to smooth production peaks and backwardly allocate production to alternative quieter periods.

While this was happening the Preactor/QAD interface along with several others that would integrate the company's Eagle Shop Floor Data Collection (SFDC) system was created by Pete Seabrook an associate of Kudos Solutions.

The QAD/Preactor system went live in September 2010 and experienced only a very few teething problems which were quickly dealt with and overcome. Now Aunt Bessie's has 3 distinct yet interconnected plans to help it achieve the best balance between managing inventory and achieving production efficiency. Short-term planning now provides detailed information for a rolling 5 week period where every product is in the correct order along with the associated running pattern and production group information. Mid-term planning extends from 5 weeks out to 13 weeks and contains all the correct products but not necessarily in the correct finalised sequence. This is done at the short-term planning stage. Long-term planning has taken the longest to achieve but now the company has a rolling 12 month forecast/plan which is so accurate and brings such visibility that contract materials purchasing can be based on it bringing the company better value contract pricing while also ensuring it only orders the raw materials it needs.



This increase in visibility is a consistent benefit across many areas of the company as well as at an overall business level, as Buckle explains.

"In many ways, Preactor is already helping drive process change within the company about how we best run the lines. Without Preactor, the questions we are now asking might not have been asked because we wouldn't have been aware of the possibility of improvements."

He continues, *"The increased visibility from Preactor has also helped us to respond quicker in a number of ways, especially when we have a problem on a line. Before, it could take a day to even notice a problem and then additional time to work out how best to react."*

Now we can see much quicker when a problem occurs as well as investigate various different scenarios for dealing with it. It also means we can immediately amend what stock we are/aren't needing to move into our short-term holding area thus minimising costs and optimising space. Better visibility of stock by product group also helps with capacity planning which helps bring storage efficiency cost savings."

Perhaps the most significant benefit is the change in attitude towards planning that Preactor has brought. *"Now we are focussed not on 'can we make it' but 'how can we make it better'"* explains Buckle. *"The emphasis previously was on satisfying orders whereas now we can not only see the associated costs at each stage of the plan but take these into account when deciding what to do. This helps go a long way towards achieving our requirement to balance our inventory management with our production efficiency."*

Another benefit is that for the first time ever, planned maintenance is now taken into consideration into the plan which not only gives a true indication of what the factory is actually going to be doing and why, but avoids potentially allocating work to a line which then has to be unallocated at short notice with all the associated cost implications. While still in the early days of using Preactor with QAD, Buckle knows there is much more to come.

"Without Preactor, the questions we are now asking might not have been asked because we wouldn't have been aware of the possibility of improvements."

Chris Buckle, Supply Planning Manager

"There is so much more that I know Preactor can do. And the more you understand what it can do, the better it helps you work and stops you making mistakes."

There are already plans to implement labour planning into Preactor which will further help smooth production spikes as well as plans to fine tune the capacity planning capabilities currently being used.

The company is also considering breaking the short term plan down into 3 shifts per day so that each shift can see the exact status of where actual production is compared to the plan.

Using Preactor to help plan the packing requirements of the business is also being investigated. It is no wonder that Buckle concludes, *"Preactor has brought unknown levels of visibility to Aunt Bessie's. Even at a business level, Preactor is starting to bring the Planning and Operations functions together and as each sees the impact of decisions by the other, it is telling us more than ever how best to run our lines and in turn, our business."*

Key Benefit

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