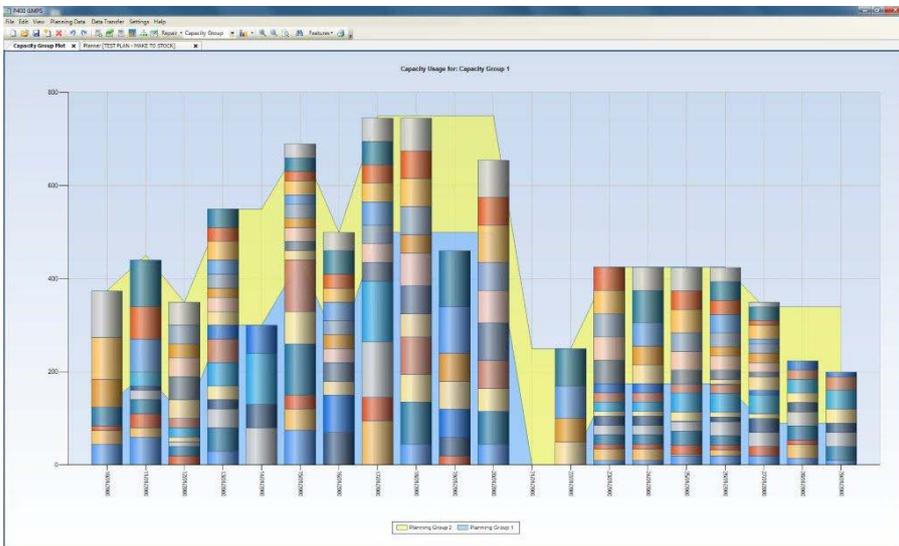




## WHY PREACTOR GMPS?

Preactor 400 GMPS (Graphical Master Production Schedule), is an essential tool for companies who want to enhance competitiveness, increase profits and improve customer service. The problems which frequently challenge the management of fast moving consumer goods companies (FMCGs) include unnecessary high stock levels of both finished product and raw material, and the possibility of this stock reaching its out-of-life date before being consumed. Effective purchasing of economic quantities of raw materials and timely use of this raw material is key to reducing one of the greatest production problems.

Preactor 400 GMPS is designed for companies operating in volatile, Make to Stock (MTS) environments that require consistently dependable methods to plan capacity and manage stock. However it is also useful for make to order (MTO) companies too.



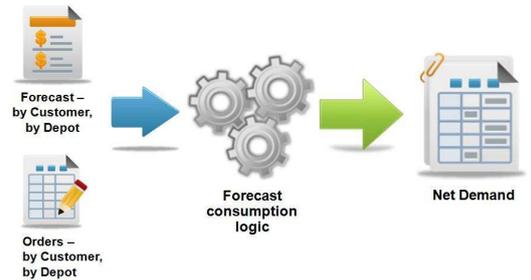
*Interactive capacity usage diagram showing stacked bars for products that will be made compared to capacity of resource (blue) and resource group (yellow). The user can drag and drop batches from one period to another as well as change the quantities and immediately see the impact on capacity usage as well as stock levels.*

Preactor 400 GMPS uniquely offers a planning tool that has the convenience of spreadsheets but with the added functionality of interactive graphs which give the user complete control over planning data. Unlike spreadsheets and other applications that are relied upon to produce long-term MPS data that in turn dictates purchasing decisions but increasingly struggle as data levels increase, Preactor 400 GMPS is designed precisely to work with high volumes of information.

The solution supports both constrained and unconstrained production, and provides a tool to 'what if' with alternative scenarios that will deliver true cost reductions where it matters.

## CAPACITY PLANNING AND DETAILED SCHEDULING

Preactor products include both Detailed Scheduling tools as well as Demand and Capacity Planning tools. They are very different but complement one another. Capacity Planning tools work in buckets or periods of time such as a shift, a day or week. The net demand for each period is calculated from the input of orders received for each product plus forecast demand.



The net demand is then loaded onto resources using simple constraints, typically hours of capacity, into those periods.

This is what is available with Preactor 400 GMPS.

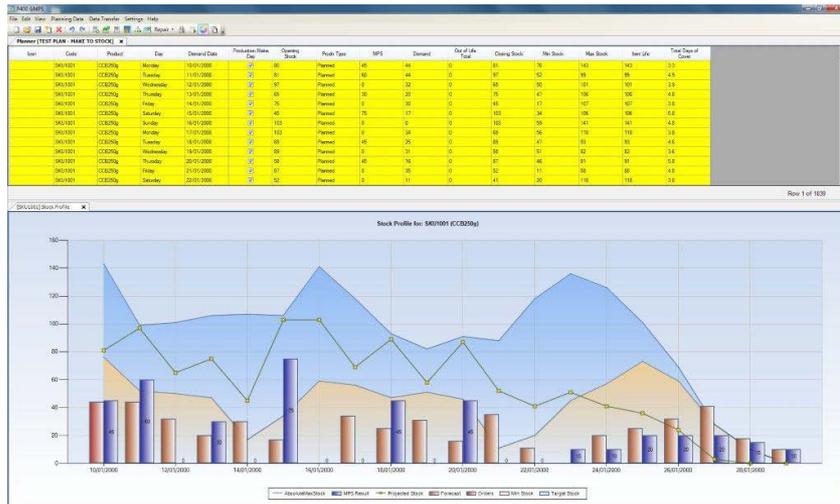
A Detailed Scheduling tool considers hours of capacity available for each primary resource, the availability of secondary resources (operators, fixtures, tooling, etc.) and the availability of materials both bought in and made in-house. In addition the sequence of loading each operation on each resource is calculated so the detailed scheduler can produce a dispatch or work-to list for each resource that shows at what time each batch or lot is to be started and completed during the schedule horizon. It is not limited by periods or buckets of time. This is available in Preactor 400 APS.

These tools can work together to get the best from both worlds with data generated by Preactor 400 GMPS being used to feed Preactor 400 APS for shorter term detailed scheduling and real-time data being fed back for the next capacity planning run.

## CASE STUDY

From humble beginnings in 1911 when Frank C. Mars made his first Mars candies in his Tacoma, Washington kitchen, Mars has grown to become a global brand with net sales of more than \$30 billion across six business segments. Almost 4,000 of the global workforce of 70,000 work in the UK manufacturing brands including MARS, SNICKERS, ORBIT, PEDIGREE, DLOMIO, KLIX and FLAVIA. The Mars facility at Basingstoke is responsible for manufacturing KLIX cup drinks and FLAVIA single serve drinks.

Mars Basingstoke supplies demand to other Mars business units in the US, EU and Japan which means that it has to manufacture a very large amount of product across a wide range of possible variations. There are 99 permutations of 33 SKUs with some machines being dedicated to soups, others to tea etc.



**Stock diagram for a single product showing current and forward stock cover based on current orders and forecast demand. The user can interact with the plots and bars such as change the demand, and immediately see the MPS calculation update and see the impact on stock levels in the future.**

Another key challenge lies in handling the diverse ways that demand comes from different markets, as Paul Hazelwood, Supply Logistics Manager explains. "When dealing with UK and EU demand, we receive a forecast breakdown to an individual product level within a given time period, typically a rolling 20 week basis. For the US and Japan however we work on a Make to Order basis, again over 20 weeks, but with a 4 week locked window when levels can't be changed. And whereas orders for the UK, US and Japan are scheduled on a weekly basis, the EU is scheduled on a less regular basis." All finished products irrespective of final destination are routed via the company's Andover facility.

Given the scale of production, scheduling this accurately would be a challenge in and of itself but as Hazelwood continues, there are many other factors that have to be taken into consideration. "We have a fixed number of machines running over a 3 shift period so optimising sequencing is critical to maximising capacity usage." He continues, "We have other considerations such as product grouping and allergen control to take into account in order to minimise changeover and clean down times and maintain a smoothness of supply. Furthermore, certain products have specific storage requirements.

All demand forecasts and orders are now received and imported into Preactor GMPS along with the relevant sales and stock data from which a rolling 20 week high level schedule is generated. Hazelwood again, "GMPS looks at high level scheduling at a weekly level and ensures that we remain within target levels across all our SKUs, taking into consideration our high level constraints. From here we export the GMPS data into our Preactor APS which then handles the detailed scheduling down to what needs to be done, where and when, taking into account our detailed level constraints. Once the schedule has been exported to Preactor, we generate an MRP report which we use to order our materials."

The most immediate benefit from Preactor GMPS has been the lowering of stock levels across the entire pipeline. Because of the interlinked nature of the Preactor GMPS and APS solution, where the impacts of every decision can be seen on everything else, Hazelwood also says that the company now works much more closely, at a global level. "Anyone involved in the pipeline has visibility of the entire pipeline and this increases confidence and trust at every level."

## KEY GMPS FEATURES

- Make to stock, make to order or mix of the two
- Finite or Infinite capacity modes
- User interaction via the grid or charts
- Shared capacity across product families
- User defined stock control parameters by product which can also vary over time
- Automatic MPS calculation with manual override
- Automatic projected stock levels after data changes are made
- Takes shelf life into account
- Alerts window to show current and projected stock levels against user defined levels
- Warning given on stock and MPS values going out of life and projected stock position adjusted to reflect issue
- Takes account of re-order multiples
- Planning Bill of Materials that can be exploded to calculate lower level MPS values
- Standard and user defined reports
- Links directly to Preactor for detailed scheduling

## ABOUT PREACTOR

Preactor International is a world leader in production planning and finite scheduling software with more than 20 years of domain expertise. Preactor runs on industry standard hardware, operating systems and databases. Preactor International has long been a Microsoft Gold Partner and certifies its products for use on Microsoft platforms and databases.

Preactor 400 GMPS is a fully configurable tool that can be customized for any type of capacity constraint without changing the core code. It offers a modelling capability that can handle differing make days, optimal batch sizing and out of life recognition. Its cost of ownership in terms of license, maintenance and initial services required for implementation is without comparison in the marketplace.

Preactor International has a network of accredited companies located around the world that it works with to provide local implementation and support. This may be important for multinational companies wanting a common solution across multiple plants but supported in the local language. This combination of certified integration and a network of accredited Preactor systems implementers in almost every part of the world is a major advantage over the competition.

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