DISKOVER in Action

Case Study:
GAH ALBERTS Gust. Alberts GmbH & Co. KG
How GAH Fills Racks and Achieves High Margin
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If suppliers of DIY stores like the GAH Alberts Gust. Alberts GmbH & Co. KG want to provide their customers with full racks and high margin at any time, filling the JIT supply chain 4.0 from the finished goods warehouse or the last machine available will not suffice. If you want to be successful on the long haul, you will need a much more sophisticated material planning strategy which will grant optimal service levels while reducing finished goods inventory and thus saving costs.

Building centres need permanently stocked racks, ideally storing fast-moving items and providing high margin. Suppliers often employ their own rack jobbers or hire sales service companies to present a perfectly maintained range of products any time. Solutions like ‘logistics 4.0’ are supposed to pinpoint sales figures more precisely and enable suppliers to react with lot-size 1 if required. Yet these efforts are in vain if suppliers try to react to the often highly fluctuating demands within 24 hours.

To achieve this service level, the suppliers would have to either have high finished goods inventory levels or JIT capacities in their production. Both is quite unnecessary during periods of low load and causes excessive costs as well as capital lockup. To reduce costs and offer the building centres more attractive pricing, the suppliers are consequently searching for alternative ways. The potential is enormous: Next to the capital lockup, which is nothing but idle capital, the additional costs for inventory amount to 18 to 30 percent and consist of capital costs, insurance, management, storage capacity and so on. The building centre must pay this debt if the supply chain is subpar. But how can you decrease inventory levels while increasing service levels?

Optimisation of material planning
First, the answer to this question is an improvement of material planning. You could deliver fast-moving items in shorter periods to reduce inventory capacity. Randomly or slow-moving items should be made to order instead of made to stock. In addition to that, you could also postpone the logistic point of isolation as far down the supply chain as possible and thus achieve a decrease of inventory across the entire supply chain. Also, many logistical parameters happen to be planned rather by intuition than reason. Filling up pallet space in a lorry with slow-moving items just to save freight costs will increase inventory levels rapidly. In summary, there are many points to optimise across the supply chain.

GAH Alberts, as an example, has reduced their inventory levels significantly and yet increased their service level at the same time. The producer of metal fittings, profiles and fence materials could reduce their inventory levels by 13 percent at a brief time and quite amazing 53 percent in nine months. Over half of the inventory had consequently been stocked with materials which was not required immediately, to be able to grant a high service level.

Another supplier of building centres, who is dealing with lamps and lights, is facing challenges of a different kind. The components they need for assembly are mostly customised and must be purchased in China. The delivery periods are usually somewhere between 60 and 150 days. Yet the customers, specialised stores or wholesalers, claim consistently high service levels. The daily average of orders amounts to 20.000 and most of them require the delivery within 24 hours. Thus, the supply department must ensure a sufficient inventory
level. If the customer has a change in demand, however, the items which have been ordered long ago, are not required anymore and become part of the overstock.

**How to manage fluctuating demands**

Almost every company must face fluctuating demands, be it when new products are released on the market, older products are discontinued, due to marketing events or simply a general shift in demand. Since GAH Alberts produces and sells many products for gardening, the company must deal with an enormous seasonality of demands. This has the effect that during peak season the available production capacity does not suffice to produce in sync with the market. So, the supposedly required quantities should be produced in advance, sometimes weeks or even months before the planned demand. If demand planning is not on point, this leads to either dropping sales since the items could not be produced and delivered in time or items end up as shelf warmers in the storage racks.

**Method and Tool Competence**

To handle these challenges properly, method and tool competence is key. To resume the example of the lamp producer: the first step here was an extended ABY analysis, i.e. a classification of the entire product range according to

- **ABC** – economic relevance,
- **XYZ** – regularity of demand,
- **STU** – number of customers per item and
- **ELA** – life cycle.

These classification characteristics are important for the determination of the proper material planning parameters for each single item. Additionally, a rule set had to be established which defines precisely which item class has to be planned and scheduled in which way. Even these basic analyses help decreasing inventory levels quickly while service levels increase, too.

Yet the effects of the analysis and the following actions will not be entirely successful if the material planners do not have the assistance of a suitable software. To add another example: A tap factory did not use their ERP system to determine reorder points and safety stocks and thus the safety stock levels and reorder points varied per item with the material planner. Each planner calculated the stocks differently or simply estimated them by experience. The material planning of purchased parts did not check reorder levels according to actual demand, but simply once a week. The entire process therefore happened manually, even though an ERP system was available, and was thus very time-consuming and despite every diligence applied to it, quite erroneous. Many made-to-stock producers and manufacturers will have to restructure and optimise their material planning before the finished goods reach the warehouse or the packing machine, so they can use the ‘big data’ their systems provide. Which is not a trivial task.

**Good material planning is a complex matter**

The complexity of material planning shows in the amount of required master data: Depending on the design, a single item may have 130 logistical parameters to consider. Imagine this number as a part of a mathematical equation and you will find the numbers too big to handle with calculation skills only. Summarising or merging parameters does not provide an appropriate solution to this problem, since big mistakes happen easily during this step. An exemplary look at the safety stock will clarify this surmise: Safety stocks are needed to safeguard against fluctuating demands, other safety stocks catch up alternating production periods and a third category of safety stocks buffers unreliable delivery periods of the supplier. Simply adding all three safety stocks up will inevitably increase the entire stock levels. It is like smoothing down a strongly oscillating graph into curves to create a ‘smooth’ forecast. This simply covers up the problem and costs a lot of money in the end. Thus, an optimal material planning requires sufficiently fine tools as well.
An ERP system is not fit for the task

Most companies already have a tool for material planning: the already available ERP system and its’ add-ons. But since ERP systems originally have other purposes to fulfil, they provide only limited options for demand forecasting and material planning which are not sufficiently sophisticated either. They lack, for instance, automatisms which continuously improve material planning parameters. Another deficit is the use of exclusively statistic procedures which base on normal distribution, such as mean average or exponential smoothing. Yet in practice we hardly come across a normally distributed demand. Demand rather fluctuates with seasons, economic activity or other influences. Consequently, the results of normal distribution methods produce systematically erroneous demand forecasts and stocking errors of up to 40 percent.

Precision tool for material planners

To conclude and summarize the facts mentioned before: To fulfil forecasting and material planning tasks, an ERP system may work. The results, however, are usually far from optimal. If material planning needs to be more efficient and effective, material planners should have an Advanced Planning and Scheduling software at hand. These precision tools for specialists, such as DISKOVER SCO by SCT, are designed to assist in any task material planning has to tackle. They provide much more sophisticated and coverage oriented forecasting features and can thus forecast the actual demand much more precisely. All-rounders like the ERP systems do not consider this niche, since it requires an elevated level of expert knowledge. And yet there is a lot of issues to address, as companies with a wide variety of products could save hundred thousand of Euros worth of materials and thus idle capital regularly. Important capital, which may be useful for product development or investments into scheduling 4.0. By the way, the implementation of an APS tool is already profitable for companies which have a sales volume of 10 million Euros or more. Further limitations for building centre suppliers do not exist, even though the product range should have some complexity to it. The branches which could profit of such tools include tap manufacturers, plumbing supplies, metal fittings and hardware as well as electronic supplies, lamps, tools and fences. Every user should nevertheless be aware that the implementation of an APS software, independent of an existing ERP system, requires a certain amount of preparation. And if a consulting should be necessary during the process, the software company might very well know the proper address, too.