Solutions

# Add-Ons for SAP ERP and SAP S/4HANA: Demand-Driven Planning

July 27, 2018 by **Andreas Schmitz**

Until recently, demand-driven planning was only available to SAP S/4HANA customers using at least on-premise release 1709 or cloud release 1708. Now, thanks to supply chain management (SCM) consulting solutions from SAP, this functionality has been extended to companies that are still using SAP ERP or older versions of SAP S/4HANA. But this is not the only benefit they deliver.

Many planners are used to working with multilevel (indented) bills of materials that list how raw materials are used to manufacture semi-finished products and the various finishing steps required to complete a customer's order. Some bills of materials even go further and include levels of distribution. The journey from raw materials to finish product is strewn with pitfalls.

On the plus side, traditional material requirements planning (MRP) has become more sophisticated, and more tools have been developed to meet the growing complexity of large-scale requests coming from a diverse customer base, including forecast functions, lot size planning, safety stock, and range-of-coverage profiles.
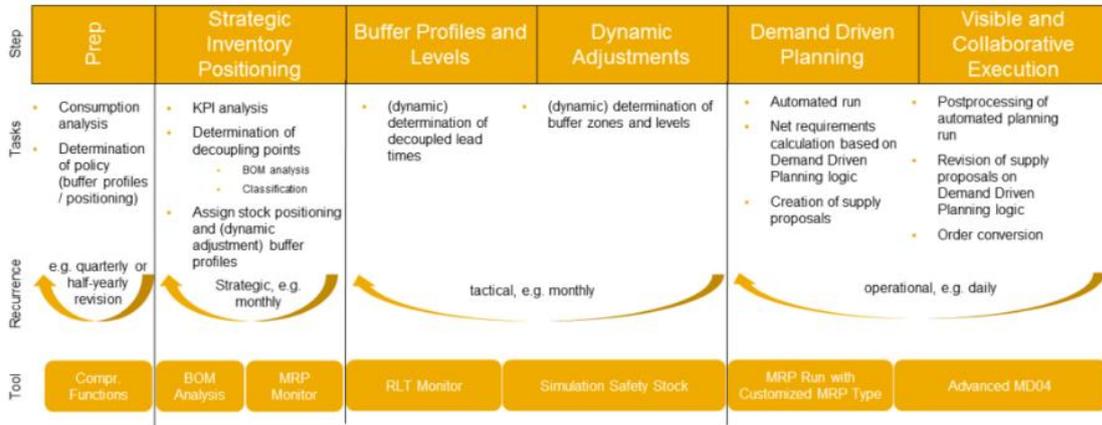
## Configuring MRP Processes is Too Complex

The growing number of tools on offer is increasing complexity. Implementing a consistent, multi-level planning concept that can be repeatedly adjusted to reflect current circumstances is becoming more difficult. And then there's the *bullwhip effect*, where even the smallest fluctuation in product demand can amplify across all levels of traditional supply chain planning, such as lot-size planning. This puts planners in a difficult position when purchasing materials, because they must take these large fluctuations into account, even if they are buying materials for products such as toothpaste – for which demand is relatively constant.

"It often makes sense to keep certain products in stock to ensure you are agile enough to react to a given situation. But you must plan your inventory systematically," explains Ferenc Gulyássy, a consultant for SCM consulting solutions. The answer to this challenge is a hybrid of traditional plan-driven and demand-oriented material planning, demand-driven planning (DDP).

This approach allows planners "to maintain a realistic inventory buffer to protect against uncertainty," says Gulyássy.

# Demand-Driven Planning with SCM CS: Usage of Functionality in Daily Life (Full Process Coverage)

| Step | Prep | Strategic Inventory Positioning | Buffer Profiles and Levels | Dynamic Adjustments | Demand Driven Planning | Visible and Collaborative Execution |
|---|---|---|---|---|---|---|
| Tasks | • Consumption analysis<br>• Determination of policy (buffer profiles / positioning) | • KPI analysis<br>• Determination of decoupling points<br>  • BOM analysis<br>  • Classification<br>• Assign stock positioning and (dynamic adjustment) buffer profiles | • (dynamic) determination of decoupled lead times | • (dynamic) determination of buffer zones and levels | • Automated run<br>• Net requirements calculation based on Demand Driven Planning logic<br>• Creation of supply proposals | • Postprocessing of automated planning run<br>• Revision of supply proposals on Demand Driven Planning logic<br>• Order conversion |
| Recurrence | e.g. quarterly or half-yearly revision | Strategic, e.g. monthly | tactical, e.g. monthly | | operational, e.g. daily | |
| Tool | Compr. Functions | BOM Analysis / MRP Monitor | RLT Monitor | Simulation Safety Stock | MRP Run with Customized MRP Type | Advanced MD04 |

Even users of SAP ERP can implement demand-driven planning.

# "Decoupling" the Supply Chain Brings Flexibility

Demand-driven planning is not based on complex, theoretical statistical calculations that involve planners trying their best to predict, say, how likely it is that the100 products ordered can be delivered. The approach is much more pragmatic and, according to Gulyássy, "intuitive and consistent." The supply chain is "decoupled", meaning that the planner must "only" monitor parts of the production process instead of the whole thing.

So-called "decoupling points" in the supply chain, Gulyássy explains, are strategic positions at which inventory buffers are maintained. This reduces the focus on forecasting product demand and means that typically error-prone forecasts no longer pose a problem.

Demand-driven planning enables planners to align all levels of the supply chain process, no matter how complex.

# SAP ERP: Five Principal Functions Explained

Gulyássy is convinced that "planning according to demand puts you at an advantage." At present, only those companies that are already using release 1709 of the on-premise version of SAP S/4HANA or release 1708 of the cloud version can use demand-driven replenishment approach. They just need to buy a license and they can then access arrange of innovative SAP Fiori-based functions.

With the latest (2018) release of SCM consulting solutions, customers that use SAP ERP version ECC 6.0 and higher can also benefit from demand-driven planning. Various SAP add-ons enable them to do this — the MRP monitor, the replenishment lead time monitor, and the safety stock simulation, customized MRP type, and advanced MD04 tools:

### MRP Monitor:

The MRP monitor suggests, for example, where to place decoupling points in bills of materials. If, say, a certain number of products are due to be ready for dispatch in 20days' time, several algorithms analyze the bills of materials and suggest when and where a buffer of raw materials, semi-finished products, and end products should be created.

### Replenishment Lead Time Monitor:

This monitor calculates the amount of time needed to restock materials. It calculates these replenishment lead times based on the decoupling points determined by the MRP monitor and, for example, empirical analyses of historical data.

## Safety stock simulation:

This tool facilitates the optimal calculation and dynamic adjustment of safety stock levels and reorder points. "This is more intuitive than statistical methods," states Gulyássy, "and we can constantly adjust the buffers based on our empirical observations."

## Customized MRP type:

Once per day, for example, buffer sizes are analyzed during the MRP run. To do this, the customized MRP type add-on takes the logic used to calculate
material

requirements as part of the demand-driven replenishment process and adds it as a new MRP type. Compared to traditional demand-driven planning procedures, this method plans for spikes in demand.

## Advanced MD04:

MD04 is a frequently-used standard transaction which gives planners an overview of demand, inventories, and goods received. SCM consulting solutions provide an advanced version of this transaction as an add-on, which features a range of additional
functions including information for demand-driven replenishment. It uses color coding to

indicate the status of materials, from dark red (highly critical), red (critical), yellow (low), and green (sufficient), to blue (overstocked).

# Using SAP GUI and Migrating to SAP S/4HANA

This selection of basic demand-driven replenishment functions shows, first and foremost, that the DDR approach makes supply chain planning more flexible and intuitive for the planner. But there is another difference between the add-ons and the DDR functionality in SAP S/4HANA that may interest planners who have been working with the traditional SAP GUI for years.

If you opt for the SCM consulting solutions, you do not have to switch to the new role-oriented SAP Fiori interface straight away but can continue using "your" SAP GUI until you have gotten used to SAP Fiori. And, equally as important: If a company decides in three years' time to upgrade from SAP ERP to SAP S/4HANA (on-premise), for example, a migration service is available. "This service allows companies to make a seamless transition to the SAP S/4HANA functions later," explains Gulyássy.

In this case, the demand-driven functions offered by SAP SCM Consulting Solutions can still be used, as can, for example, SAP GUI transactions.

Gulyássy: "SAP GUI and SAP Fiori values are saved in the same database tables –they're just displayed differently in the interfaces."

Tags: ERP, Procurement, SAP ERP