Extending SAP ERP for Production Planning and Scheduling

By Founder of SCM Focus Shaun Snapp

The use of SAP ERP for manufacturing planning automatically compels manufacturers to ask how they can extend ERP with more advanced software to gain higher efficiency and output. The first step is to understand, at a high level, what capability the ERP manufacturing module actually delivers.

SAP PP

Production Planning (PP) is the SAP ERP module used for manufacturing. PP is both an execution system, as well as a planning system. However, in software terms, the PP module is "stabilized"; that is, little new development for some time now. PP is only designed to address basic planning requirements. Those SAP customers who desire greater functionality in production planning are directed by SAP to the PP/DS module within SAP APO, a suite of advanced planning products which run on separate hardware from SAP ERP.

Planning Functionality in PP

PP has the ability to run MRP and perform unconstrained planning. The MRP run creates production orders and purchase orders on dates the system generates, based on dates products are demanded by customers, but with adjustment for the lead times required to produce the product. The resources may be well defined, but there is nothing to restrict orders from being scheduled when there is no capacity available to produce the product.

With unconstrained planning, then, a second step called capacity leveling is necessary to move orders from periods where there are too many orders vs. capacity to periods where the factory is under capacity.

Misplaced Popularity

Clearly, the usability within PP tends towards the low side. If one observes the history of SAP, SAP never really competed with the depth of functionality in any supply chain module, but rather on the ability to provide an integrated system between the financial side and the supply chain side. While quite basic, production planning within the PP module was considered "good enough" despite its lack of enhancement to the manufacturing side. Still, SAP ERP became one of the most popular applications or set of applications ever sold into the enterprise software market.
.

Past the Basics

As a consultant with a focus on advanced planning, I find it difficult to see SAP PP as anything more than a starting point for any company serious about its production operations. For most companies, improvement in any area comes down to a matter of priorities.

Advanced planning became a mature set of applications in roughly the mid-90s. While many larger companies have already gone forward and implemented more sophisticated production planning and scheduling applications, then integrated to their ERP system, others in need of drastic improvement in PP have not.

I believe the manufacturers' reticence to upgrade to a better solution is threefold: expense; fear of integration difficulties; and, the mistaken belief that no production planning and scheduling software exists which can accurately model their unique production requirements. I will address the issue of expense and integration in separate articles as I prefer to focus this article on the functionality all companies should consider in seeking to enhance their ERP systems for production planning.

What Attributes Matter

For years, companies have been persuaded by major software brands instead of true capabilities of the software. The approach is understandable, but it has not proven effective. In fact many companies obtain low functionalities and have disabled their business following this approach. The quality of software selection is the most important part of any systems project because it is the only way to assure the right functionality fit for their needs.

No evaluation process should begin without clear-eyed detail of requirements. Then, you must test and re-test functionality to determine which features should be included in the final solution. An application may offer basic functionality, but that does not address ease of use, maintainability or robustness of the install base. The common statement that an application "can" do something does not provide evidence that it should be. Many

projects fall into the trap of moving towards unsustainable and non-value added adjustments because one thing or another "could" be done in a system that was never designed to do that thing in the first place.

While any production planning and scheduling solution can be made to work with SAP PP, the ultimate objective of your evaluation is to find provable differentiators between different applications. The argument presented by SAP that their solution integrates "naturally" or "easily" to SAP ERP is simply not born out on any of the projects I have worked on or any of the experiences of my clients. My experience with the CIF, SAP's middleware (which connects APO to SAP ERP) is that it is inferior to custom solutions. I have created many custom solutions from scratch, both in controllability and maintainability that consistently outperform the CIF.

To recap, your planning and scheduling applications should be evaluated by these criteria:
1. Alignment between the application functionality and manufacturer requirements
2. Transparency strength of user interface to production process and ease-of-change capability
3. Ease-of-maintenance for different resources, BOM, routing and other master data information
4. Flexibility with instance and what-if scenario creation

Don't Miss Improvement Opportunity
Many companies unwittingly miss golden opportunities to book significant improvement in production planning and scheduling by sticking with status quo—the basic SAP ERP offerings. Remember, the conventional thinking that it is too difficult to integrate a non-SAP production planning and scheduling systems is majorly flawed. There's a sizable body of user experience in the field that speaks otherwise.

Finally, don't be blindsided by brands. Misplaced brand loyalty causes manufacturers to select solutions that are score very low in functionality. Worst yet, these decisions can result in an outright mismatch for your production planning and scheduling needs. That means long and costly unwinds to correct the problem, or an unwelcomed sentence of working with mediocrity.

***