

Integrated S&OP and S&OE

S&OP plans are quite attractive and look great with all kinds of fancy colorful charts. However, being at such a high level, their accuracy is far from reliable. Secondly, they need to be translated to execution plans. Execution plans require detailed explosion of bill of materials, actual capacities of resources (instead of number of units per day), correct setting of inventory levels at each stage of the supply chain, risks due to breakdowns and supply shortages, possibility of batching, Order level pegging, alternative methods of production, transportation alternatives and many other constraints that are needed to implement an accurate plan. Sales & Operation Execution (S&OE) provides the platform to accurately implement the plans and coordinate with all the stakeholders as well as addressing the supply and production issues in a realistic way knowing what the alternatives are and what to expect. In addition, whatever goes wrong, there needs to be a methodology by which the plan is put back on track, more or less, in real-time! In conclusion, when you are considering a S&OP solution, ask: How do I execute the plan in the absence of all these missing constraints? Or simply ask your S&OP vendor, where is the S&OE?

Systems designed for S&OE go even further than just planning the execution, they can also provide invaluable information regarding why certain orders or customer deliveries might be late, they can suggest alternative methods to avoid it. They can also ensure important customer specifications are met for every order. An example is a specific qualified supplier to be pegged to the customer order. As another example, ensuring certain range or attributes of supplies or machinery are used to match the customer requests.

In recent years, there has been a lot of discussions regarding bringing planning and execution closer to each other in a seamless environment. Having an integrated S&OP and S&OE environment seems to be the answer. We believe to accomplish this, one needs to have a system with unified data model that generates plans at a high level and then passes it on to lower and lower levels of detail for execution. Thus, from network planning and S&OP all the way down to factory planning and sequencing, having a consistent model making use of constraints at different levels is ideal. We have successfully deployed an AI technique called constraint propagation that defines guide posts to limit the search space for the next level of detail so that very quickly the system can arrive at a solution. Much like finding a desired location, you start from country to

city, then street and then the street number and apartment number to find an individual. Constraint propagation, as described in this example, systematically eliminates infeasible solutions to quickly arrive at the right one.

For more information on S&OE as well as unified data models, please visit www.adexa.com

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