

# WHITEPAPER



## LEVERAGE ERP FOR SALES AND OPERATIONS PLANNING

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Every two years or so, there is a new crop of three-letter acronyms in manufacturing IT. Sales and Operations Planning (S&OP) is certainly one of the hot “TLAs” in recent years. So naturally, many technology vendors and consultants are trying to jump on the S&OP bandwagon.

This rush to embrace S&OP has led to some confusion as to what this remarkable discipline really entails. In this white paper, we will clarify what S&OP is and what it is not. We will also examine how enterprise software like ERP can facilitate S&OP, and what functional requirements are necessary to make it work.

## Back to the source

S&OP is not really new, but is really an extension of the production planning movement of the 1980s, expanded to include sales, research and development and new product planning. This united, integrated approach makes it easier to recognize supply issues or a mismatch between key resource availability and demand and quickly make adjustments. A monthly or weekly S&OP meeting allows you to react to the marketplace in ways that would not be possible without excellent communication and up-to-date data. Gone are the days when sales can simply try to sell as much as possible and production is driven by an inflexible schedule. Current conditions demand, more than ever, that we have one plan that drives the whole company, and that this plan is arrived at through a well thought-out and repeatable process.

The S&OP movement originated in 1999 with the book *Sales and Operations Planning: The How-to Handbook* by Thomas Wallace and Robert Stahl. The book is now in its third edition, and Wallace and Stahl have expanded upon their original

concept to focus, for instance, on the impact of S&OP on a lean environment. But others in the market, in trying to take advantage of the S&OP cachet, may be causing confusion as to what S&OP is all about. Vendors who are primarily involved in supply chain-related solutions try to lay claim to S&OP. Logistics vendors claim their solutions will facilitate S&OP by getting the right product in the right place at the right time. CRM vendors claim they deliver S&OP by providing visibility into the sales pipeline.

One vendor claims its solution delivers S&OP because it “maximizes inventory, optimizes production and ensures the availability of products to retail customers.”

All of these things seem like desirable goals, but they all point to an attempt to move S&OP into tactical activities rather than strategic activities. Wallace and Stahl, in their book, make a distinction between the executive-level S&OP that they originally intended and what the general market has come to understand. The definition of S&OP has been watered down to include business processes that might contribute a certain amount of information to an S&OP initiative, but certainly do not constitute S&OP in and of themselves.

Wallace and Stahl’s original vision was really just about everyone in a company coming together so you are not just in the same hymn book, but on the same page. That includes sales, marketing, research and development, manufacturing, procurement and finance, all collaborating on one set of plans that everybody is working to. Furthermore, this process should be repeatable, and must benefit from executive-level participation. Using S&OP methodology, executives should have access to all the information they need to reconcile supply and demand along with any new products that are being proposed. The goal is to produce a definitive plan for what the company will produce and sell into the intermediate term.

*“As business conditions change, this single plan can be revised accordingly... Monthly S&OP meetings with weekly reviews allow you to react so much more quickly to the marketplace than would be the case with more disjointed management systems.”*

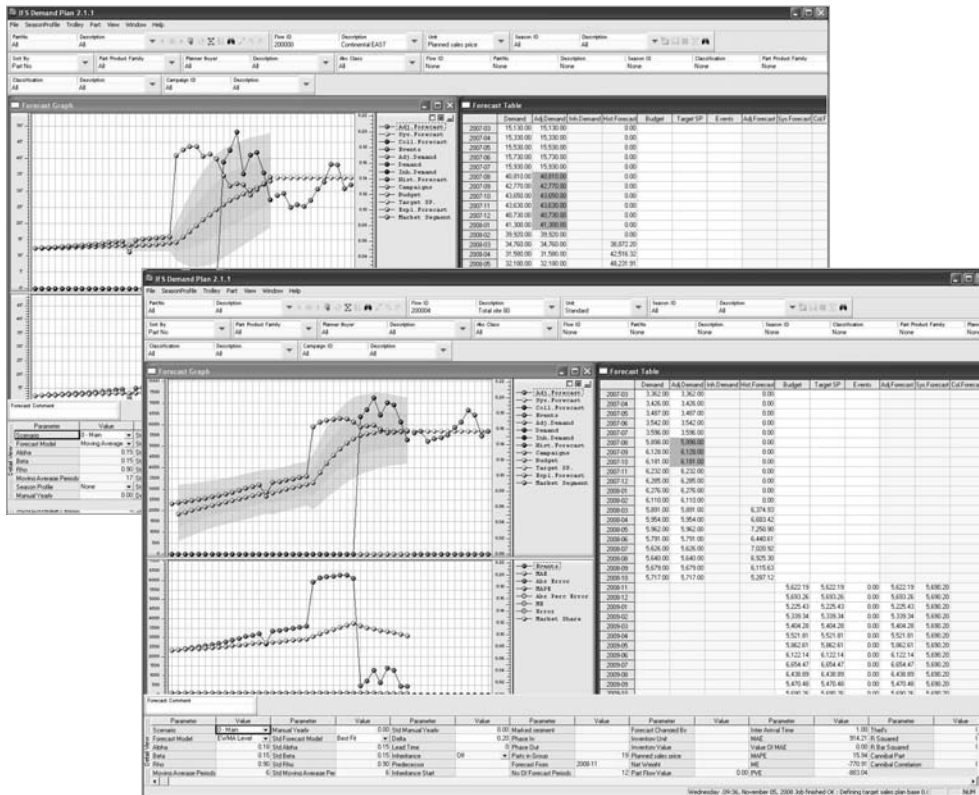
There are different approaches to this, as would be expected for a discipline that cuts across multiple industries, but in a basic sense S&OP is about arriving at a single set of plans that everyone uses to drive the business. As business conditions change, this single plan can be revised accordingly. If there is a shortfall in sales, adjustments can be made much more quickly in the production area. If new products are proposed, executives can do a quick reality check as to whether capacity exists to expand the current product offering. S&OP requires transparency of data from across the

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company, and frequent reviews to allow decision-making on this comprehensive, current set of data. Monthly or even weekly S&OP meetings allow you to react so much more quickly to the marketplace than would be the case with more disjointed management systems. Sharing a common plan means that sales cannot be selling without regard to production's ability to deliver, and production cannot ignore market demand in its production planning processes.

S&OP helps a company do this by standardizing five basic processes:

- Evaluate your sales forecast
- Compare demand to production plan
- Use CRM to see how customer orders are accelerating or decelerating
- Prior to an S&OP meeting, get middle managers to agree, if possible, on a course of action to recommend to senior executives.
- At the S&OP meeting, review where you were, and review where you are and review where you are going.



Sales forecasts must be tracked in both sales units and monetary units.

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The first step requires a thorough evaluation of your sales forecast reports—what you sold versus what you expected to sell. That is where strong demand planning functionality comes into play, and it is very important that the forecast be checked in both dollars and units. As you compare sales forecasts to what has occurred, you can identify those outliers in sales, those areas where sales were either too high or too low and determine what happened in each case.

This step will vary quite a bit by industry. If you are dealing with retail industries like retail fashion and other style-sensitive consumer products, this guess work has to be done a lot further in advance than if you are making a commodity like food products. But in the food and beverage industry, there is often a commodity supply issue. For a potato chip manufacturer, for instance, there might be an 18-month window to reserve the potatoes you are going to have. Other manufacturers of consumables will need to plan around seasonal purchasing issues and spoilage timelines; so much of their planning must be timed to accommodate that product availability.

In examining the sales forecasts, it is important to consider any promotional plans to determine how they are likely to affect sales. After combining data from sales with anticipating effects of promotions and marketing activities, you are left with a single projected sales number per SKU and product family. It is certainly important to have a forecast by SKU, but in S&OP, you are not dealing so much with the mix of individual products as much as total volumes by product families. You will typically find six to 12 product families within a company. If you are planning those correctly, the individual SKUs can fluctuate with there and your product family forecasts are likely to still be accurate.

Assuming you are working on the basis of a monthly S&OP meeting, early in

Account Description	Forecast 2006H1	Forecast 2006H2	Forecast 2006Y1	Forecast 2006Y2	Budget 2006	Diff
121700 Racina Sales, Awareness	121,700	127,320	8,000	8,000	24,000	396,560
4 3012 Racina Sales, Direct	0	0	8,000	8,000	24,000	603,533
5 3013 Racina Sales, Impact	0	0	8,000	8,000	24,000	388,055
6 3014 sales, not trackable	93,120	73,000	8,000	8,000	24,000	224,480
8 3022 Sales, Events, Home	0	0	8,000	8,000	24,000	123,036
9 3732 Volume discounts	0	0	8,000	8,000	24,000	89,040
9 Revenues	184,820	196,620	201,360	48,000	48,000	144,000
11 4521 Cost of goods sold	0	0	4,000	4,000	12,000	1,105,529
12 5018 Rent for premises	0	0	4,000	4,000	12,000	930,000
13 5089 Travel costs	12,363	8,356	8,200	4,000	12,000	69,838
14 5810 Tickets	10,741	7,445	7,264	4,000	12,000	37,450
15 6070 Business entertainment	0	0	4,000	4,000	12,000	8,799
16 6200 Telecommunication and post control	0	0	4,000	4,000	12,000	19,332
17 6211 Telephone	3,991	4,029	4,150	4,000	12,000	24,170
18 7050 Wages to blue-collar employees loc	0	0	4,000	4,000	12,000	648,896
19 7250 Wages to managers and white-collar	0	0	4,000	4,000	12,000	278,727
20 7269 Cost remuneration and benefit in kind	2,139	0	4,000	4,000	12,000	14,139
21 Costs	29,294	19,829	19,614	40,000	40,000	120,000
23 Income	155,566	176,791	181,746	8,000	8,000	24,000
24 Margin	84.2%	89.9%	90.2%	16.7%	16.7%	16.7%
25 Target	15.0%	15.0%	14.0%	-	-	16.0%
26 Diff	69.3%	74.8%	74.3%	-	-	0.3%

S&OP requires that sales forecasts be broken down by product family with margin.

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the month, you use this data to create a sales forecast for the next twelve months on a rolling calendar basis. Some products characterized by rapid obsolescence and short product lifecycles that might last for only a few months might require a shorter rolling calendar, but most industries can do very well on a 12-month forecast.

Review your forecast and compare it with supply. Do you have any serious machine or production problems, manpower issues or planned work stoppages? Consider the risk that these interruptions may pose to your ability to meet demand. If possible, use the risk management software embedded in your enterprise applications to mitigate this risk. This functionality also ought to allow you to perform a cost-benefit analysis to ensure that the cost to mitigate the risk is worthwhile. Those decisions and recommendations can be presented to upper management when you get to your last step, which is the actual S&OP meeting.

When considering demand, it is important to review data from a customer relationship management (CRM) tool to see if customers are accelerating and decelerating orders. At IFS, most of our customers are mixtures of make to order, make to stock, assemble to order and engineer to order, and we have seen that each of these manufacturing modes require a slightly different approach to this step. By this point, you should be ready to examine spreadsheets of outputs from the other processes to see where demand and supply are lined up in terms of dollars and units by product family. But before this information is sent to an executive level or a board of directors, middle management should arrive at a course of action for the coming planning period. If these managers can't reach consensus, senior executives or the board need to arrive at their own plan, but it is of course preferable to have a solid recommendation from management.

The agenda for a typical S&OP meeting is fairly simple in that that you review where you were, review where you are and review where you are going. If your enterprise software includes collaboration tools like management portals and document management, these S&OP meetings can be virtual in nature. If a key executive is traveling or is located on another continent, they should have full access to the most current information as it is reviewed by the rest of the group. Even if everyone is on site, together in the same room for the meeting, these software tools can speed up the meeting by allowing for more dynamic analysis of the data.

Executives will want to:

- Review the data and talk about any new or proposed products and how they might cannibalize existing products.
- Review lost business to determine why deals or customers were lost, and also

consider major opportunities and successes.

- Analyze the major product families. In theory, a product family should be similar to a grouping in a master scheduler, and should go through similar processes in the plant. This does not have to be the case, but it is important to be able to see the impact that any adjustments to the product mix will have on scheduling and manufacturing processes. This is where simulation within your master scheduler functionality becomes more critical. Then it will be possible to start approving the various manufacturing and procurement rates necessary to deliver on sales efforts.

Meeting to review these dynamics on a monthly basis takes a high level of commitment on the part of senior management as well as the middle managers responsible for assembling the data that drives the process, but it delivers a strong return on the investment in time and supporting information technology. Apart from management support, the only thing required is the functionality inherent in your ERP system, which should include strong master scheduling with the ability to simulate the impact of adding or adjusting production.

So exactly what functional requirements are necessary for an ERP system to support S&OP?

### Technology requirements

One of the main goals of implementing an enterprise application is the same as the goal of S&OP – to get an entire business singing off the same page of the hymn book. But ERP packages that consist of a number of point solutions that have been purchased by the same company and integrated point-to-point leave information in some of the same silos that ERP was meant to eliminate. This will cause problems when it comes to S&OP methodology, particularly if your business changes in such a way that the integrations between functional areas become too restrictive.

Enterprise suites comprised of functional modules designed from the ground up to work together in a comprehensive and flexible fashion will better support S&OP processes.

Depending on the nature of your company, customer relationship management (CRM) functionality can also be important to an S&OP initiative. Manufacturers running in make-to-stock mode, regardless of whether they are selling to or selling through, will typically not get much good S&OP data from a CRM package. However, companies in make-to-order, configure-to-order and engineer-to-order modes will find that their discussions with customers on planned orders or projects are the best source of information when it comes to projecting future sales, particu-

larly in industries with long sales gestational processes. As the sales pipeline is reviewed from one month to the next, pending projects can be reviewed to see which are accelerating and which are decelerating over the next six to nine months. Regardless of manufacturing mode, leading economic indicators that are appropriate for your vertical industry – ranging from housing starts to new jobless claims—could also be incorporated into a future sales projection. But any manufacturer that starts certain assembly, configuration or engineering processes only once an order is signed should have customer information in a CRM tool that is integrated tightly with its ERP and S&OP functionality.

From CRM at the beginning of the value stream to engineering to manufacturing, information must be able to flow freely through the system.

Apart from good, tightly-integrated architecture, perhaps that most important piece of functionality for S&OP is a powerful demand planner. A good demand planner with statistical capabilities will allow you to not only forecast demand, but identify the different outliers and document why they did not perform as planned. An ERP system must also allow provide simulation tools that provide a view into the future, allowing executives to analyze how new products and other changes would impact plant capacity and affect the ability to deliver on existing commitments. There are a number of ways that an enterprise application might be designed to make this process easier. IFS Applications, for instance, allows users to roll up the master schedule directly into the S&OP module.

In order to facilitate S&OP, an enterprise application must not only capture data, make it easily accessible and allow it to be analyzed, but must present it in an easily-understood, executive-level format. In an S&OP meeting, data must be concisely and clearly packaged from forecast all the way down to production and backorder/backlog to offer visibility of how inventory, production capacity, revenue and other dynamics are changing over time. These numbers drive a number of decisions made on the executive level and, if presented properly, can even be used by finance to predict cash flow.

### The case to get started now

Apart from enabling technology, the most critical requirement for S&OP is a commitment on the part of senior management to get started. And senior executives should be able to immediately recognize the benefits that S&OP offers.

Organization-wide efficiencies result when everyone in the business is working together. But it is hard to work together closely when the departments of the company have their own plans and only really compare them at an annual business

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meeting. By using technology to review S&OP dynamics on a more frequent basis, you are also more prepared to react to changes in the market. Whether confronted by an upturn or a downturn, effective use of S&OP lets you make adjustments more rapidly, and helps you take better advantage of rapidly-developing opportunities in the marketplace. If you know that you are coming out with a new product and suspect it will cannibalize one of your other products, it will be important to plan for that variance and then track that cannibalism over time. Without this level of tracking and analysis, it is impossible to know for sure whether that self-cannibalism took place, to what extent, or why it did or didn't happen. So S&OP can help you understand why your business is doing what it's doing—why it is behaving the way that it is. S&OP also brings harmony to a business, a welcome change from the typical discordant activities as various departmental leaders pull the business in different directions.

Enterprise-wide technology makes frequent planning meetings possible because it eliminates the time-consuming process of gathering data from disparate systems. Ideally, S&OP functionality is already built into your enterprise software, which further reduces the organizational burden.

*“If changes in the business environment, your supply chain or overall demand come as a total surprise, you are likely to over-react. You can wind up laying people off, hastily hiring people on or subcontracting work at a much higher cost, blowing your margin.”*

There is an equally compelling downside to doing nothing, and ignoring the potential that S&OP offers. Without an S&OP initiative, you will not be able to think in a coordinated, big-picture way because each department is working on their own “island of excellence,” completely oblivious to the needs of the overall organization. This will present problems as you try to make rapid adjustments to the business, and you will have a lot of the supply shocks and demand shocks. If changes in the business environment, your supply chain or overall demand come as a total surprise, you are likely to over-react. You can wind up laying people off, hastily hiring people on or subcontracting work at a much higher cost, blowing your margin.

## Conclusion

S&OP is a no-nonsense way to streamline a manufacturing operation, give more control to executives and do away with a lot of the problems caused by everyone doing their own thing. Whether your enterprise consists of a single plant or a far-flung,

global organization, deep chasms tend to exist between different functional departments. Each has its own goals, its own metrics and its own culture. A disjointed view of the different departments of a company or the different divisions of a larger enterprise make it impossible for senior executives to make decisions about where to allocate resources, which parts of the company have growth potential or which parts of the company have excess capacity. S&OP fixes this by delivering one set of numbers you are going to produce to from one planning period to the next, and allows you to track those efforts over time.

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IFS (OMX STO: IFS), the global enterprise applications company, provides ERP solutions which enable organizations to respond quickly to market changes. The solutions allow resources to be used in a more agile way to achieve better business performance and competitive advantage.

Founded in 1983, IFS has 2,600 employees worldwide. With IFS Applications™, now in its seventh generation, IFS has pioneered component-based ERP software. The component architecture provides solutions that are easier to implement, run and upgrade.

IFS Applications is available in 54 countries in more than 20 languages. IFS has over 600,000 users across seven key vertical sectors: aerospace & defense; automotive; manufacturing; process industries; construction, contracting & service management; retail & wholesale distribution, and utilities & telecom. IFS Applications provide extended ERP functionality, including CRM, SCM, PLM, CPM, enterprise asset management and MRO capabilities.

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