

10 PROVEN STEPS TO SUCCESSFUL S&OP

By John E. Boyer, Jr.

One-number philosophy, perfect data, everyone showing up in a scheduled meeting, and support from top management are the keys to the success of an S&OP process ... there will be many people to discourage you, but your persistence will prevail ... describes every little detail to assure successful implementation of the S&OP.

This article is a roadmap for starting a Sales and Operations Planning (S&OP) process in your company. There is no sense in “reinventing the wheel.” So read on and internalize this street-smart pragmatic approach on how to implement S&OP, which is based on my real-world experiences. Even if you have already started, you will find some tips that will enable process improvements.

S&OP OVERVIEW

My definition of S&OP goes like this. It is a top management’s handle on business, which requires balancing demand and supply on a regular and formal basis. Here, top management means the company president, the people who report directly to the president (direct reports), and a few other selected people like the demand manager. When top management has a handle on the business, it means the president has the ability to make fact-based resource decisions quickly. By “regular” I mean at set intervals, such as monthly, and by “formal” I mean that there are very specific data formats, meeting agendas, and a meeting calendar.

The balancing of demand and supply

requires a bit of explanation. Consider two scenarios: What happens if demand is greater than supply? It may call for overtime, outsourcing, late shipments, premium inbound freight, and so on. All of these activities drive up the cost, and likely cause less than desirable customer service. On the other hand, what happens when supply is greater than demand? This may lead to increased inventory, underutilized fixed costs, excess labor and equipment capacity, and so on. Here again, costs go up.

So students and practitioners of S&OP will argue convincingly that the company



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has its best chance to minimize the cost of doing business when demand and supply are in balance. Also, investment will be leveraged and customer service will be at its best. This is easily said, but difficult to do. Making proactive resource decisions is hard work because it is based on huge amounts of data, requires superb business knowledge, commands a collaborative effort from all functional areas, and takes time and dedication of all process players. But it does work.

STEPS TO S&OP

The two distinct phases of S&OP are process design and process conduct. In the design phase, all of the technical parts are engineered, and in the conduct phase, S&OP is used as a business management process. The following 10 steps describe how to go about these two phases. Steps 1-5 are design and steps 6-10 are conduct.

1. *Decide to do it.* This seems quite obvious, but there are some important nuances to this statement. Someone in top management must decide to get involved in S&OP, and this person must have the authority to commit resources including money and people’s time. It does not need to be the entire top management team or even the president at this point. But it must be someone who will champion, learn, resource, and help design it, as well as help teach other top management players. This could be the president, the vice president of operations or sales, the CFO, or another top management person. If it is more than one, all the better. But at least one must be on the team. If S&OP lacks this type of leader, the activity may become optional and suffer from lack of resources such



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as IT support. But once this person decides to do it, the process will have the traction it needs to move forward. You have heard before that initiatives such as S&OP need top management support, which is true. But unlike a popular belief that all of them must be on board, you only need one key player to get started effectively. And in most companies, there is one person in such a position who “gets it” and will decide to do it.

2. **Form the design team.** This is the group of people who will take care of all of the process workings. It is not a big team—usually about six people. Here is a typical cast:
 - i. The top management leader. This person needs to be on the team to hear first-hand about all of the design issues and to be comfortable with the decisions made. If this person is not on the team, all of the decisions will have to be re-explained, which will be a waste of time. It would be like doing the design twice. So it is best to have this person on the team from the beginning.
 - ii. A person from IT. S&OP is very data intense process, which requires a major amount of data mining, system knowledge, reporting capability, and possibly some data element engineering. Here we need one really awesome technically competent hands-on IT person who listens, comprehends, can communicate with regular people, and who can put this project second to none.
 - iii. The demand manager. During the process, this person is responsible for providing data/information in a “fit-for-use” condition for the S&OP process. He/she must have marvelous interpersonal skills, full command of the business system, detailed working knowledge of spreadsheets, considerable knowledge of customers and products, and must know all of the players well. Most of the

time, this is a new position or a duty added to someone’s current role. In larger companies, it can be one fulltime job or it can be assigned to a few people. In smaller companies it would use only a few hours per month of a person’s time.

- iv. Someone from operations. This person must have a grip on purchasing, scheduling, shipping, inventory control, and material planning. This person should also understand how the new product introduction process works so it can be effectively integrated into S&OP.
 - v. A person from accounting. The primary role of this person is to make sure that all accounting design aspects of S&OP tie out precisely with the financial reports. For example, if an S&OP document says that actual sales for a certain month were \$9,547,289, the income statement should say the same thing. If not, the S&OP process will have a credibility problem. Also, the S&OP document (on one of the pages) should state revenue in the same categories as the income statement.
 - vi. A person from sales. This person must have good knowledge of order entry in terms of coding, order promising, and date management as well as an understanding of how the entire sales organization operates in terms of regional managers, reps, distributors, consignments, and other sales/distribution channels. Plus this person should know the customer base. This person should also have a connection to marketing if it is a separate functional area.
3. **Educate everyone.** Just because a person is a vice president or a department manager doesn’t mean he or she has a good working knowledge of S&OP. For most people, admit it or

not, S&OP is something that they have never done formally and don’t know the first thing about it. So all of the process players must take the time to learn about it. The players are anyone who is on the design team, who will participate in any of the ongoing conduct, and who will be directly affected by the process output. In a typical 300-person company, this is usually about 30 people—10% of the population. And they should all be in the room together; this is an interactive learning process where the process players not only learn from the presented subject matter, but also from each other. Normally a two-day workshop is sufficient to give all of these people a baseline understanding of S&OP and get them on the same page. More may be needed later, but this is good for now.

4. **Make a calendar.** One of the major keys to successful S&OP is to “show up.” This means that when it is time for an S&OP meeting and you are supposed to be there, you must show up. If you are supposed to have some data ready by a certain date, it must be done by then. To enable “show up,” demand managers of successful companies publish a one-year calendar that shows the month-end date, all of the key S&OP processes, the players, the dates, and the times—all on a one-page document. It is critical that everyone knows the S&OP process dates and gets them on their personal calendars. Moreover, the S&OP activities must take priority over all other activities (with a few exceptions). The calendar should be set up early on in the game even before you know exactly what all of the steps are. The reason is that normally you must go many weeks or months into the future to find space in everyone’s personal calendars to slot the S&OP activities. Controlling the “show up” factor by using the calendar will give your S&OP process a chance to succeed. Without it, S&OP will surely fail.

5. **Design the process.** There are three prerequisites and eight basic process steps. The three prerequisites follow.
- i. Decide on the S&OP format. This is where you decide how the sales data, production data, inventory data, backlog data, and capacity data should look. For example, do you want all products on the same page for one topic method or all the topics on the same page for one product method? Format options will be discussed in the education session so the team will have some knowledge base for deciding it. Deciding the data format first will guide the development of the other process steps.
 - ii. Determine data hierarchy. Once you know the data format(s), decide on the data hierarchy. This technique enables mining the data in the desired format in terms of the sales point of view, the production point of view, the product point of view, and so forth. For example, sales may want the data by sales person, by customer, and major product group; production could be set up by plant, by production line, and by major product group; and marketing might be by major and minor product groups. The entire coding scheme must be designed to enable data mining to present information in a fit-for-use condition. This setup takes a huge amount of courage because quite often, some or many of the existing coding schemes must be modified or expanded. And this is a critically important step that has system implications. Make sure this is done before any of the next steps.
 - iii. Measure performance. A year or so after you start the project, someone will ask, "How has S&OP helped?" You should be ready with a quantifiable answer. The normal desired performance metrics are on-time shipments, reduced inventory, and decreased

cost. There are several other metrics, which are sales forecast accuracy, fill rate, past due backlog, and excess and obsolete inventory to name a few. Make sure that you have data of clearly defined performance metrics, and a professional format for charting them. Review them at least monthly with the entire team, and use them to drive improvement.

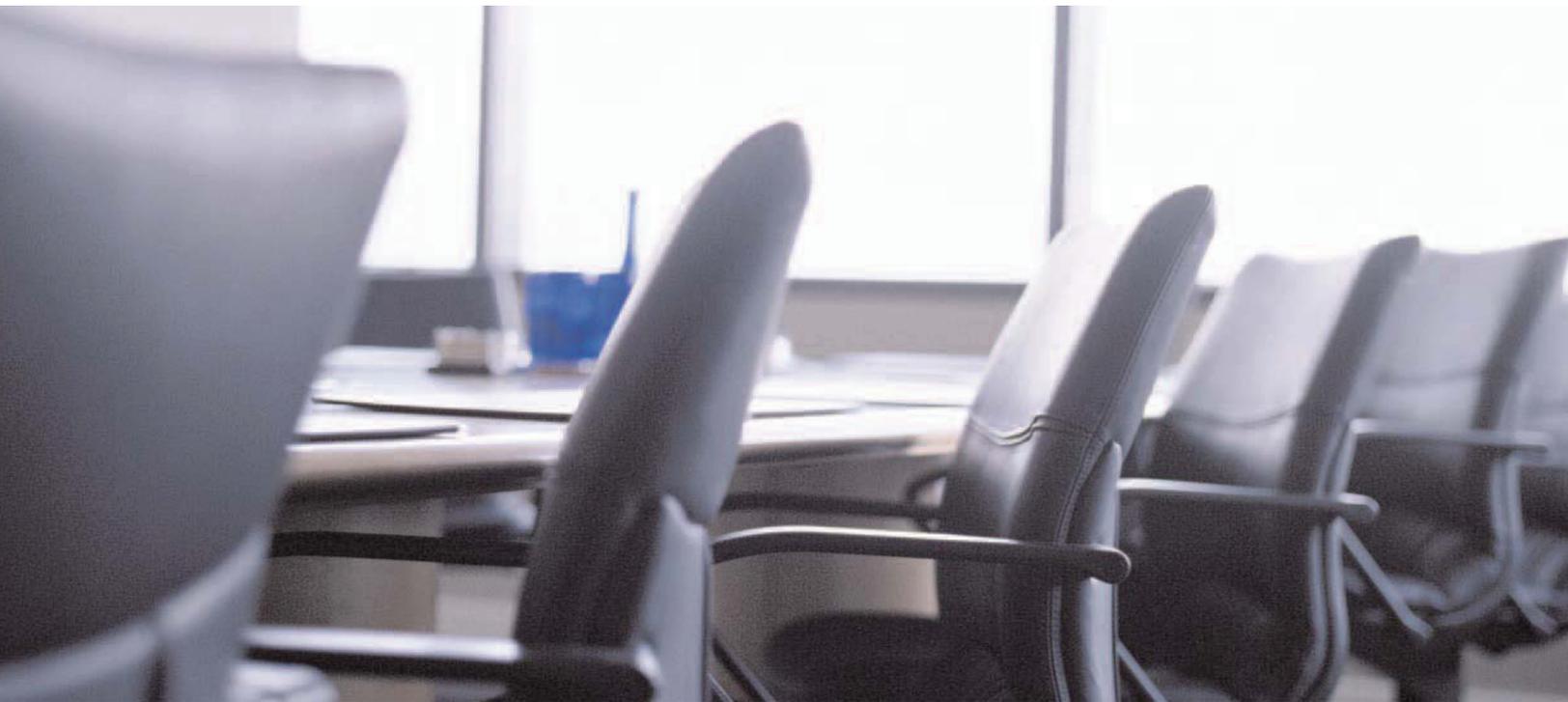
The eight basic S&OP process steps done each month are:

- i. Report month-end actuals (Day 1). At the close of business, the actuals for bookings, shipments, backlog, supply, and finished goods inventory must be available. This is not a financial closing. This is simply knowing what the actuals were for the month in terms of units and dollars in the categories specified by the S&OP document format. These actuals should come from the business system in a fit-for-use condition, and should not require any spreadsheet post processing or other human intervention. And all of these are enabled by properly engineering the data hierarchy design.
- ii. Get sales forecast input (Day 1). The group must decide who is going to provide sales forecast input. Done correctly, it should come from the company's sales managers, not from the sales reps, and not from a forecast analyst. If it is engineered correctly, they must state what they are going to sell. Usually this information is presented at an aggregate level by sales persons for top customers, top products for each customer, and then completed by having smaller customers and products lumped into an "other" category. One decision that needs to be made in this step is which tool will be used to collect and

marshal the data. Sometimes it is with a spreadsheet or a business system (ERP), and other times it is with an integrated forecasting system. It is very important to determine exactly which tool to use, precisely how it should be used, and how to engineer its setup for perfection.

- iii. Aggregate all of the sales input (Day 1). Sometimes this is done automatically within the business system, and sometimes a person must combine the data into one document. The point is that all of the data from all the salespeople must come together in one place in a fit-for-use condition.
- iv. Conduct the corporate sales review meeting (Day 2). This is where the vice president of sales meets with sales managers and other people as needed to work on the demand side. The past month's performance is reviewed, reasons for off-plan performance are discussed, and corrective actions are identified. The data submitted by the salespeople is reviewed, modified if necessary, and agreed upon. Assumptions are stated as to why the numbers are the way they are—maybe they are that way because of new customers, a product launch, a lost customer, or for another reason. The output of this meeting is the demand plan (or sales forecast) that will be used by the demand manager for the next step. Ideally, the demand plan is a "booking plan" that includes incoming orders (not shipments) in units, as well as their average selling price.
- v. Do the S&OP analysis (Day 3). Once the demand manager has the sales forecast from sales, the other elements of S&OP can be added including backlog, shipments, finished goods inventory, and supply (production and purchased finished goods for resale). The

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demand manager must take the sales forecast, figure in the aged backlog, and then determine a shipment plan. This shipment plan is also the revenue plan. The shipment plan coupled with finished goods inventory build-up or reduction results in the supply plan (production plus purchased finished goods). Sometimes, there are a few supply plan alternatives depending on capacity constraints, inventory issues, and backlog conditions. But it is the job of the demand manager to sort through these issues, arrange the data in a fit-for-use format, and get the information ready for the pre-S&OP meeting. The format for organizing the data is critical, and must be done correctly.

- vi. Conduct the pre-S&OP meeting (Day 4). This meeting is conducted by the vice president of operations and includes direct reports, the demand manager, and other key materials, scheduling, manufacturing, and/or purchasing people. The objective of this meeting is to sort through all of the supply side issues to determine if the sales plan can be accommodated and inventory and backlog objectives can be met. At that point, shipment and supply plans are finalized. Performance from the previous month is reviewed and forecasts presented. Any materials, capacity, supplier, and/or tooling issues that surface are discussed and resolved (or escalated). The primary outputs are production rates by line or cell, and production rates for key suppliers. Sometimes, there is an iteration where sales people will be called in to revise the sales plan based on unsolvable capacity issues. In that case, the result will be a “constrained” sales forecast that may call for product allocations.

- vii. Conduct the S&OP meeting (Day 5). This meeting is chaired by the president and includes his/her staff, demand manager as well as other selected people. Performance from the previous month is reviewed and forecasts are presented. Action items from the past meeting are reviewed and new issues from either sales or operations are presented. Options are discussed and decisions are made and documented. The output of the meeting is an approved plan for sales (bookings), backlog, shipments (and revenue), inventory, and supply. All planning and execution details must derive from this plan.

- viii. Communicate the S&OP output (Day 5). Within an hour after the meeting, the official S&OP document should be available on-line to those who have access and are affected by it. For example, a production line supervisor should know the run rate (that is, units to produce per day) for his/her line based on the S&OP document. Additionally, there must be system data readily available in a fit-for-use format to show the actual vs. forecast anytime a person wants to check progress throughout the month.

6. *Hold the first S&OP meeting cycle.*

This is generally about six months after the design process kicks off. Be certain that the date and time is on everyone’s calendar, and make sure you hold the first meeting at that time. This first meeting will be a bit ragged and there will be data trauma, which is inevitable. But have courage. Work out the issues. Have patience. Encourage the process participants. It will get better. But simple as it seems, it takes about six iterations to get all of the issues worked out and for people to have a good understanding of what is going on.

7. ***Refine the process.*** During the first six or so meetings, much of the time will be spent on meeting mechanics, formats, data accuracy, and basically just learning about what should be done in the S&OP process. The design team’s job is to take the meeting issues and work out all of the process problems. As time goes on, the focus will shift from sorting through the S&OP mechanics to actually running the business. The key here is to have enough courage and determination to work through the process refinements.

8. ***Document the process.*** Many companies like to put all of the agenda, process flows, data sources, the calendar, the S&OP document itself, and other items in an uncompressed, generic ISO (International Organization for Standardization) format. It fits right in with the process documentation scheme. Even without the ISO format, all key process activities should be written down so people can be trained, and to ensure that the process is understood and followed.

9. ***Train the users.*** All people who are affected by the S&OP process must be taught how to read the S&OP document, and know how their decision process is dependent on the data and decisions in the document. Plus, all affected people must have access to the document and know how to navigate to it. Sounds simple enough. Just make sure people can get it.

10. ***Link S&OP to ERP.*** This means that the output of S&OP must drive the ERP system so that planners and schedulers who are making detailed day-to-day inventory, purchasing, and production decisions are in sync with what has been decided at the aggregate S&OP level. There are basically two ways to do this. One, run “roll-up” reports for shipments, finished goods inventory, and supply in the same groupings as of the S&OP. Then, see how close the rolled up

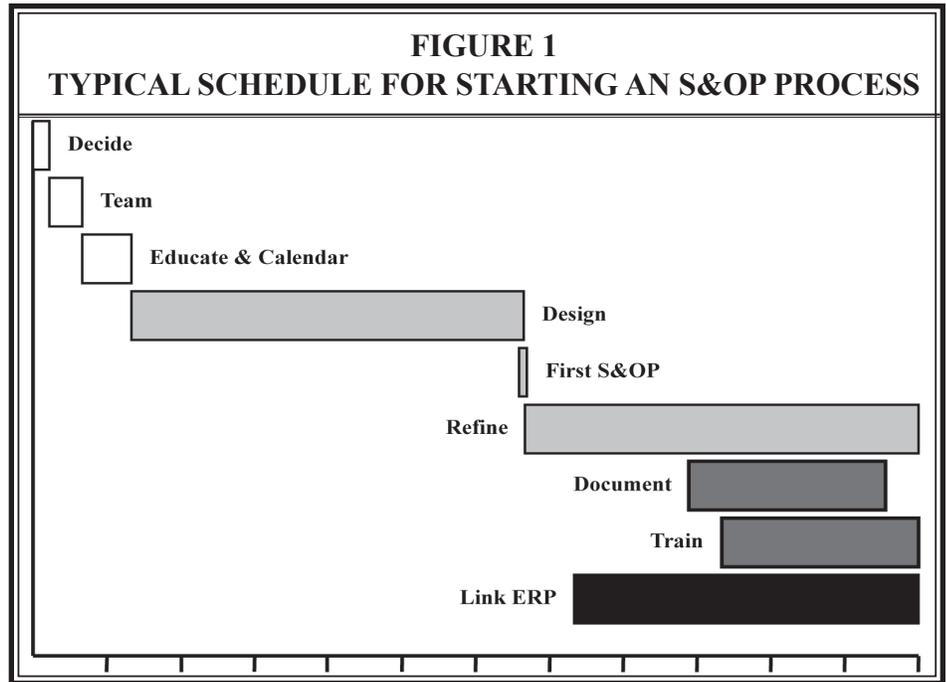
detail matches the S&OP document. If there are significant differences (more than $\pm 3\%$), then adjustments must be made to detailed planning. Or, two, send the de-aggregated shipment plan to the ERP system as a sales forecast, run plans, and use the rolled up inventory and supply data as the data for the S&OP process. This way, there is no need to match the results; there will be only one result. However, doing “what if” analysis at the aggregate S&OP level is much more difficult and time consuming.

KEYS TO SUCCESS

There are four primary keys for a successful S&OP implementation. The first one should be no surprise—SHOW UP! All of the players must be there when it is time to have a meeting. You’ve got to make a commitment to the team, to the company, to the process, and to yourself to show up on time. Lack of participation tells others that S&OP is optional, which you don’t want to see that happen. So suck it up and show up! You can do it!

Two, you need top management support. Remember, initially you may need just one person who can get the project resourced, prioritized, and put it on the radar screen. With persistence, you will have a good chance of getting others on board. Ultimately, you need all the top management people to participate. Usually, it gets much easier once some specific documents, formats, system screens, and performance measures are in place.

Three, have a one-plan process. When you start out, there will probably be several sales plans, revenue plans, production plans, and other related plans in the company. If you ask, “What will sales be for the next three months?”, the CFO will pull out a document and share his/her number, the operations vice president is likely to have a different document with a different number, the sales vice president may have another number, and the president may have yet another number in his/her head that no one else knows about.



Sound familiar? This is what is called a multi-plan process. But once you get S&OP in place, you will have a one-plan process. When that question comes up, all of the people mentioned above will reach for the same S&OP document and have the same answer! One plan. One set of facts. This way all will be on the same page.

Four, have perfect data. What I mean by this is that all of the actuals for bookings, backlog, shipments, inventory, and supply must be absolutely clean. Think about it, there is only one right answer to what we did last month. But today, if you ask the players mentioned earlier “What did we ship last month?”, you will probably get four different answers. But there is only one answer! With multiple answers you will spend the entire S&OP meeting trying to figure out who has the right answer, leaving no time to make any business decisions. Unfortunately, this is true. So in the design of the S&OP process regarding collecting the monthly actuals, settle for nothing less than the perfect numbers. The reports that you use to mine and present the data must be engineered right down to the last detail, and all must agree on how it is done. Then lock down the reports so that there is essentially no chance for a

bogus monthly actual.

TIMEFRAME

Implementing an S&OP process normally takes a year—six months for designing and six months for conduct refinement. This will happen only if your company really makes it a priority, resources it, and works at it diligently. Otherwise, you will lose momentum and become disenchanted with the results. Figure 1 shows a typical schedule.

SOME FINAL THOUGHTS

People generally do not like new things, and S&OP will likely be a new thing for your business. You may have a million and one reasons why it is not a good idea. But you need it. You have to watch out for constant finger pointing, a multi-plan process, data trauma, lack of preparation, top management opting out, attendance problems, and so on. My advice is to deal with it. Your persistence will prevail. If you and your top management champion truly believe that S&OP is the way to go, you will make it. I wish you the best on your S&OP journey! ■

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Ad ... tbd