

10 Steps to Successful S&OP



J. E. Boyer Company, Inc.
John E. Boyer, President

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10 Steps to Successful Sales and Operations Planning

by John E. Boyer, President, J. E. Boyer Company, Inc

If you are starting a Sales and Operations Planning (S&OP) process, this article will give you a roadmap on how to do it. There is no sense “reinventing the wheel”. So read on and internalize this street-smart pragmatic approach on how to implement S&OP that is based on my 37 real-world experiences. Even if you have already started, you will find some tips that will enable process improvements.

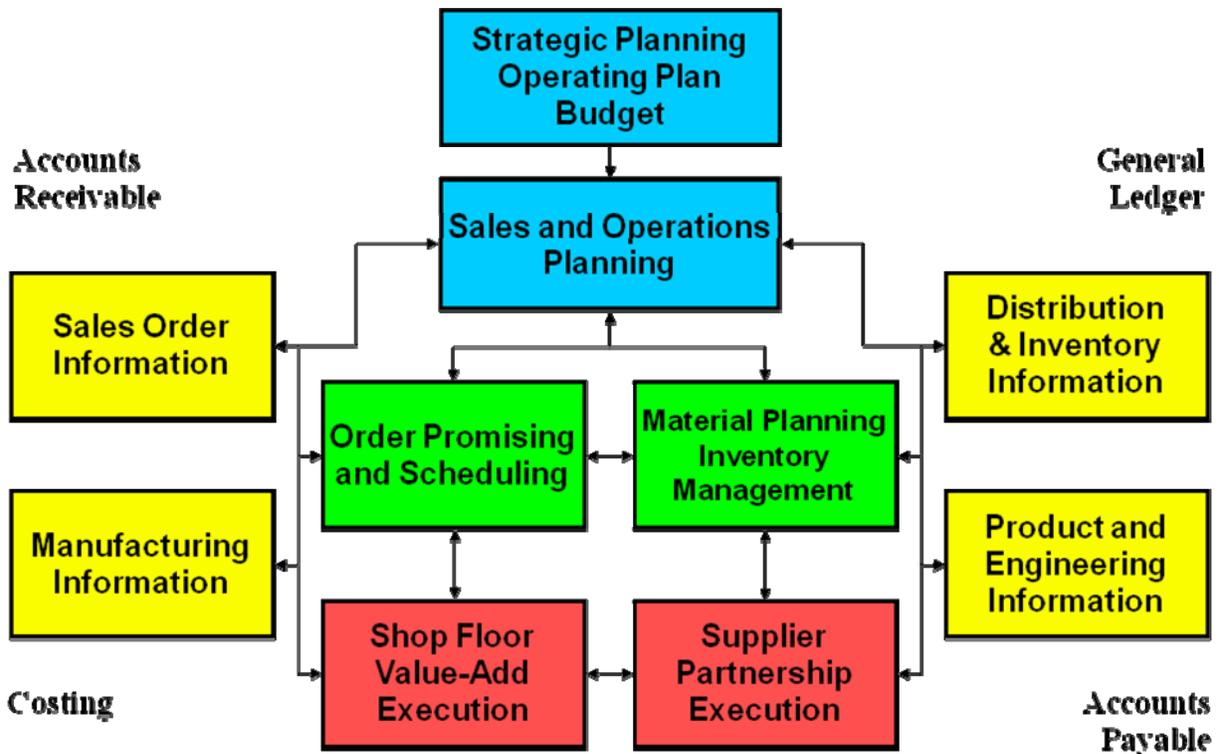
S&OP Overview

My definition of S&OP goes like this. It is top management’s handle on the business ... the balancing of demand and supply on a regular and formal basis. Let’s break down the definition:

- ❖ “Top Management” means the company president, most direct reports, and a few other selected people like the “demand manager” (to be defined later).
- ❖ “Handle on the business” means the ability to make fact-based resource decisions quickly.
- ❖ “Regular” usually means monthly.
- ❖ “Formal” means that there are very specific data formats, meeting agendas, and a meeting calendar.
- ❖ “Balancing demand and supply” requires a bit of explanation. Consider two scenarios:
 1. Demand is greater than supply. What happens? Overtime. Outsourcing. Late shipments. Premium inbound freight. You can add more to the list. All of these activities drive cost up in some way, may create more inventory, and likely cause less than desirable customer service.
 2. Supply is greater than demand. What happens? Inventory build. Underutilized fixed cost base. Excess labor and equipment capacity. You can add to this list, too. Again, costs go up.

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

The following diagram shows where S&OP fits in the Business Enterprise Model. It is a monthly planning process that deals with aggregate planning groups normally in monthly buckets. Bookings, backlog, shipments, inventory, and supply are the key elements. It is not a strategic planning process (this is higher level) nor is it a scheduling tool (this is a more detailed process).



The remainder of this article addresses how to put in place the business process used to accomplish the demand and supply balance ... Sales and Operations Planning.

Steps to S&OP

There are two distinct phases to S&OP: 1) process design, and 2) process conduct. In the design phase, all of the technical workings 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 with management must decide to get involved in S&OP, and this person must have the authority to commit resources ... 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: 1) champion it, 2) learn it, 3) resource it, 4) help design it, and 5) help teach it to the other top management players. This could be the president, the vice president of operations or sales, the CFO, or other key top management person. If it is more than one, all the better. But at least one. If S&OP lacks this type of leader, the activity may become optional and suffer from lack of resources such 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. That's true ... S&OP does. 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:
 - a. 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 wastes time ... it's like doing the design twice. So it is best to have this person on the team from the beginning.
 - b. A person from IT. S&OP is very data intense and requires a major amount of data mining, system knowledge, reporting capability, and possibly some data element engineering. This is 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!
 - c. The demand manager. During the process conduct, 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 current role. In larger companies, it can be a fulltime job. In really large companies, it may be a few people. In smaller companies it often takes a person only a few hours per month.
 - d. A person 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.
 - e. 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 documents says that actual sales for the current month was \$9,547,289, the income statement better 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.
 - f. A person from sales. This person must have good knowledge of order entry in terms of coding, order promising, and date management, and understand 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 they have 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 ... really. 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, they learn 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. Yes ... show up. That means when it is time for a 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 then. To enable "show up", successful companies make a calendar that shows the month end date, all of the key S&OP processes, the players, the dates, and the times. And the calendar goes for a year. This calendar is a one-page document that is published by the demand manager. It is critical that everyone knows the S&OP process dates and gets them on their personal calendars. And, the S&OP activities must take priority over all other activities (with a few exceptions). The calendar should be done early 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. Mastering "show up" via the calendar gives your S&OP process a chance to succeed. Without it, S&OP will surely fail.
5. **Design the process.** There are eight basic process steps, and three prerequisites.
 - a. The three prerequisites are:
 1. Decide on the S&OP format. How do you want to look at sales data? Production data? Inventory data? Backlog data? Capacity data? Do you want the "all products on the same page for one topic" method or the "all topics on the same page for one product" method? Format options will be presented and discussed in the education session mention earlier, so the team will have some knowledge base for deciding this. Deciding the data format first will guide the development of the other process steps.
 2. Determine the data hierarchy. Once you know the data format(s), the data hierarchy is the technique that 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. Here are some examples:
 - a. Sales: Sales person -> customer -> major product group
 - b. Production: Plant -> production line -> major product group
 - c. Marketing: Major product group -> minor product group

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 which has system implications. Make sure this is done before any of the next steps.

3. 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 improvements are improved on-time shipments, reduced inventory, and a lower cost base. There are several other metrics that help these top-tier measures such as sales forecast accuracy, fill rate, past due backlog, and excess and obsolete inventory to name a few. Make sure that you have clearly defined performance measures, have the data, have a very professional format for charting performance, review the metrics at least monthly with the entire team, and use the metrics to drive improvement.
- b. The eight basic S&OP process steps done each month are:
1. 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. Clean data. Fit-for-use. Just like the S&OP format. And all of this is enabled by the proper engineering of the data hierarchy design.
 2. Get sales forecast input (Day 1). It must be decided who is going to provide sales forecast input. Done correctly, it is the company’s sales people ... not the reps ... not the demand manager ... not a forecast analyst. The sales people. In an engineered way, they must state what they are going to sell. Usually this is at an aggregate level by sales person for the top customers, top products within customer, and then completed by having smaller customers and products lumped into an “other” category.

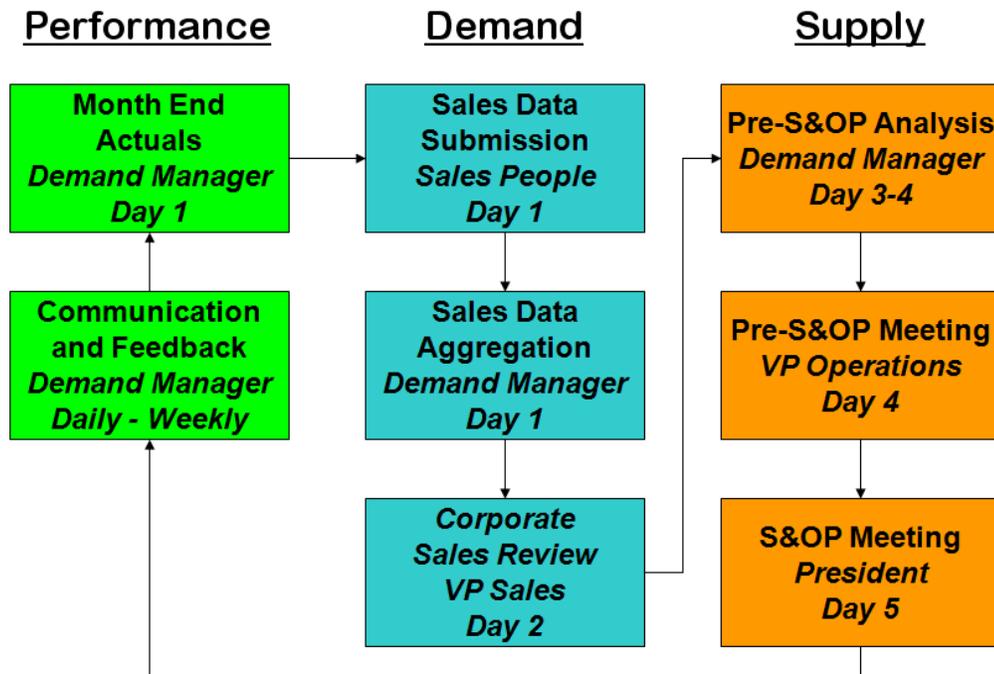
One decision that needs to be made in this step is what tool will be used to collect and marshal the data. Sometimes it is a spreadsheet, sometimes it is within the business system (ERP), and sometimes it is with an integrated forecasting system. But it is a HUGE issue to determine exactly what the tool is, precisely how it will be used, and engineering its setup to perfection.
 3. 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. Point is that all of the data from all of the sales people must come together in one place in a (you guessed it) fit-for-use condition.
 4. Conduct the corporate sales review meeting (Day 2). This is where the vice president of sales meets with all direct reports 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 sales people is reviewed, changed if necessary, and agreed upon. Assumptions are stated as to why the numbers are the way they are ... new customers, a product launch, a lost customer, and so forth. The output of this meeting is the demand plan (or sales forecast ... same thing to me, but may be viewed differently by some) that will be used by the demand manager for the next step. Ideally, the demand plan is a "booking plan" ... incoming orders, and not shipments, and include units and average selling price.

5. 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: backlog, shipments, finished goods inventory, and supply (production and purchased finished goods for resale). The demand manager must take the sales forecast, figure in the aged backlog, and determine a shipment plan. This shipment plan also is the revenue plan. Then the shipment plan coupled with finished goods inventory build or reduction objectives results in the supply plan (production plus purchased finished goods). There are basically three scenarios for the production plan: level, demand chase, or hybrid (a combination of demand chase and level). 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 to perfection.
6. 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, see if the inventory and backlog objectives can be met, and to finalize the shipment and supply plans. Performance from the previous month is reviewed and forecasts presented. Any materials, capacity, supplier, and/or tooling issues are surfaced, discussed, and either 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. The result is a "constrained" sales forecast that may call for product allocations.
7. Conduct the S&OP meeting (Day 5). This meeting is chaired by the president and includes direct reports, the demand manager, and 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.

8. Communicate the S&OP output (Day 5). After the meeting (within an hour), the official S&OP document should be available on-line for all those having access who are affected by the results of S&OP. For example, a production line supervisor should know the run rate 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 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. Draw a line in the sand, and just make sure you hold the first meeting on schedule. The first meeting will be a bit ragged, and there will be data trauma. It's 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 mechanics to 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 ISO 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 through 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:
 - a. Run “roll-up” reports for shipments, finished goods inventory, and supply in the same groupings that are the S&OP groupings. See how close the rolled up detail matches the S&OP document. If there are significant differences (more than +/- 3%), then adjustments must be made to detailed planning.
 - b. Send the de-aggregated shipment plan to the ERP system as a sales forecast, run planning, 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 is 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;

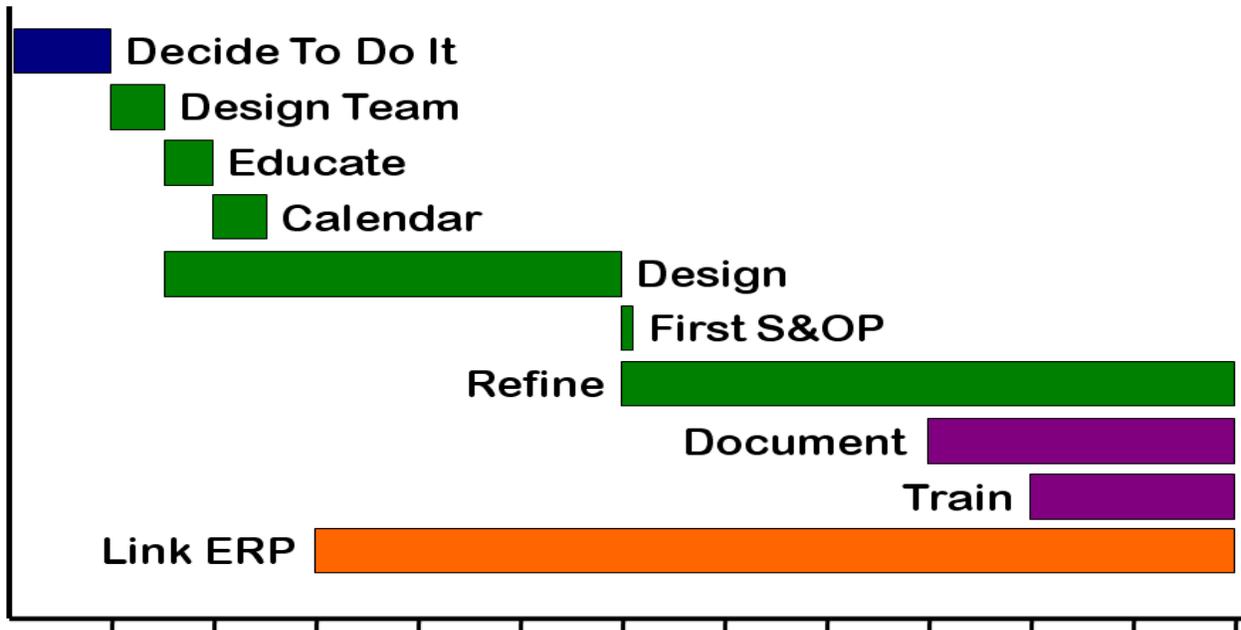
1. The first one should be no surprise ...SHOW UP! All of the players must be there when it is time to have a meeting or it is time to have a task done. You've just got to make a commitment to the team, to the company, to the process, and to yourself to show up on time dressed to play. It's that simple. Lack of participation tells all of the others that S&OP is optional, and you do not want that. So suck it up, and show up. You can do it!
2. Get top management support. Remember, initially this really only needs to be one person to get the project resourced, prioritized, and on the radar screen. With persistence, they have a good chance at getting the others on board. Ultimately, you need all of the top management people to participate. But it becomes much easier many times to get them going once there are some specific documents, formats, system screens, performance measures, and so forth to show them.
3. 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 a number, the operations vice president will go for

a different document and have another opinion, the sales vice president will say go ask them, and the president will have a 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 their S&OP document and have the same answer! One plan. One set of facts. All on the same page ... literally!

4. 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 questions “what did we ship last month?” to the players above, 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, and will ignore the business decisions that must be made. Unfortunate, but true. So in the design of the S&OP process regarding collecting the monthly actuals, settle for nothing less than perfection. 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 S&OP normally takes a year ... six months of design and six months for conduct refinement. And that is if your company really makes it a priority, resources it, and works at it diligently as described above. I mean really work at it. If not, you will lose momentum and become disenchanted with the results. The following chart 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. There will a million and one reasons why it is not a good idea. You will need 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! Work past it. 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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Please direct your comments and questions to:

John E. Boyer, Jr., President
J. E. Boyer Company, Inc.
3347 North 900 East
North Ogden, Utah 84414
Phone: (801) 721-5284
Fax: (801) 737-0799
e-mail: jeb@jeboyer.com

