Chapter 2

So Just What Is Sales & Operations Planning?

Sales & Operations Planning, as used in the broad sense, is a set of decision-making processes with three main objectives:

1. To balance demand and supply

2. To align volume and mix

3. To integrate operational plans with financial plans

Let's take a look at each one.

1. Balancing Demand and Supply

All of us learned about demand and supply back in Economics 101, except our professors probably referred to it as supply and demand. Many economists still do. Unfortunately that reflects an obsolete mind-set, a carryover from the Post-World War II era when supply was short and companies could sell everything they made.

We prefer to put demand first, because that's where it should be. Demand is the driver. It's what the customers want, and today they're the boss. Supply, of course, refers to the resources one has available to meet the demand.

Is it important to have demand and supply in balance? Indeed it is. If demand exceeds supply – by more than a little bit for more than a little while – bad things can happen: stock outs, missed

shipments, unhappy customers, increased costs of purchased items, premium freight, unplanned overtime, and more.

If supply exceeds demand by more than a little bit for more than a little while, bad things can also happen: excess inventory, cash flow problems, the possibility – or reality – of a layoff, reduced production volume, and the attendant lower overhead absorption.

Now, is it always bad if demand and supply aren't in balance? No, sometimes it can be a good thing. It all depends on where the imbalance lies. For example, if projected demand ten months in the future exceeds current supply, and if the company can economically add more capacity sooner than that, that's fine. Demand is growing; business is good. Being able to see the projected imbalances soon enough is what's needed, so that the *potential* imbalance problems can be eliminated before they become *actual* problems.

One of Sales & Operations Planning's main jobs is to help people balance demand and supply.

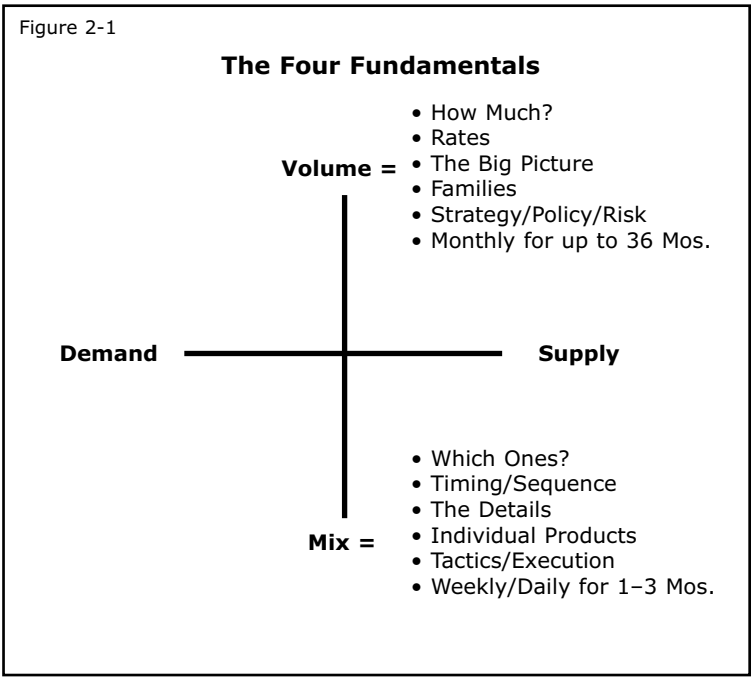
2. Aligning Volume and Mix

Unlike demand and supply, volume and mix aren't exactly household terms. To get a handle on what they mean in this context, let's take a look at Figure 2-1.

Here are the differences between volume and mix:

- Volume is an aggregate issue – the big picture – while mix is the details.

Figure 2-1



- Volume is often expressed in product families or groups while mix exists at the level of individual products, stockkeeping units (SKUs), and customer orders.

- The volume question is "how much?" while mix is concerned with "which ones?" – as in "which job to run first, second, and third?" or "should we ship the Jones order on Thursday and the Smith order on Friday or vice versa?"

Questions of volume precede those of mix, so wise companies plan their volumes first, and spend enough time and effort to do it well. They find that doing so makes mix problems much less difficult. But where do most companies spend almost all of their time? On mix. Many look at volumes only once per year, when

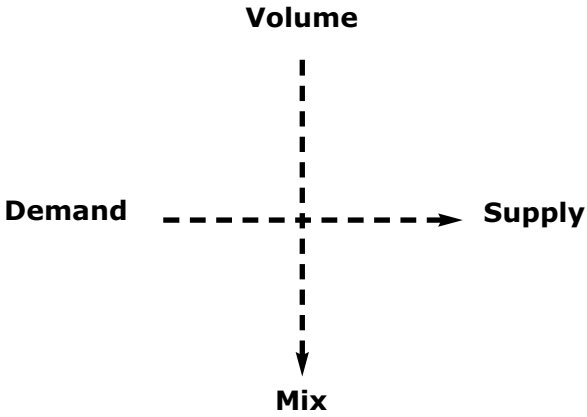
they do the Business Plan. They probably wouldn't do it even that often, except the financial folks make them do it. Once each year, the CFO says, "Well, folks, it's budget time again . . ."

So why do most companies spend more than 99 percent of their time on mix issues to the exclusion of volume? It's simple: mix – individual products – is what companies ship to their customers. That's where the pressure is. Mix is seen as important and urgent. The effective planning of future volumes may be seen as important, but it is in fact less urgent.

As a result, many companies set their volumes – sales rates and production rates – no more than once per year, when they do their annual business plan. But how often during an average year do volume needs change? It's almost always more often than once every twelve months. For most companies, it's more than once per quarter.

Just as demand is the driver of supply, so volume should be the driver of mix. (See the figure on page 19.) The volume plans, authorized by senior management, set the rates and levels of activity within which the mix activities must conform. We submit that most companies don't work hard enough at forecasting and planning their volumes and spend too much time trying to predict mix. They overwork the details and don't focus enough on the big picture.

So, another primary objective for Sales & Operations Planning is to align volume and mix – routinely.



3. Integrating Operational Plans with Financial Plans

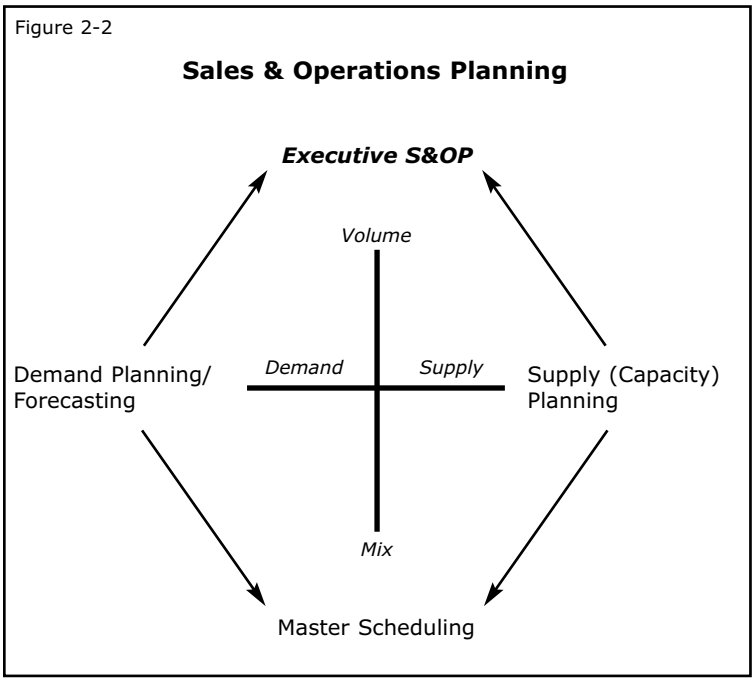
In many companies, the operational plans are not tied to the financial plans authorized by top management. Is this important? Absolutely. The operational plans drive activities in the real world: the customer order department, the receiving dock, the plant floor, and the shipping dock.

Therefore, when the operational plans deviate from the financial plans, it's likely that real-world results will not match the financial plan. But the financial plan is, in effect, top management's commitment up the line: to the corporate office, to the board, to the financial community. This is a serious shortcoming in many companies, and it is perhaps one of the reasons why the average tenure of leaders of businesses – CEOs, COOs, presidents, general managers, managing directors – is relatively short.

For almost all executives, the overarching element in business is financial performance. They're measured by it; they're compensated by it; their careers can literally live or die by it. Thus another primary objective for Executive S&OP is to integrate the operational plans with the financial plans.

So now, let's revisit the four fundamentals and see how the tools in Sales & Operations Planning support them (See Figure 2-2.)

Figure 2-2



This figure is telling us that:

- The total Sales & Operations Planning set of processes operates at both the volume and mix levels. It includes:

- Executive S&OP (for volume)

- Master Scheduling (for mix)

- Demand Planning/Forecasting and Supply (Capacity) Planning, which feed both Executive S&OP and Master Scheduling

- Executive S&OP is that part of Sales & Operations Planning that deals with volumes, utilizing tools for aggregate forecasting and aggregate supply planning. This is the point of contact and control for executive management, their handle on the business. As we said in the Preface, we're using the term *Executive S&OP* when referring to the executive process and *Sales & Operations Planning* for the larger entity, which includes mix issues.[1]

- Executive S&OP:

  - operates with aggregated groupings of products: product groups, product families and subfamilies, and so forth.

  - occurs on a monthly cycle, with provisions for mid-cycle updates when changing conditions dictate.

  - has a forward planning horizon of 15 to 36 months.

[1] For more on this, see the Preface on page *xv* and Appendix A.

- Master Scheduling is more detailed. This process:

    - operates with mix: individual products, SKUs, and customer orders.

    - has a time frame of days or weeks.

    - extends into the future for an amount of time necessary for production of individual products and the procurement of their components.[2] This could be extremely short, several days or less, which could be the case with companies using Lean Manufacturing effectively – or several months for products and specialized components outsourced from far away.

  The Master Scheduling process gets input from Executive S&OP and from the detailed forecasting and capacity planning tools. Master Scheduling drives the even more detailed planning and scheduling tools of Plant Scheduling and Supplier Scheduling, which can be done in a traditional fashion or via Kanban (from the world of Lean Manufacturing) or by using Advanced Planning Systems (powerful algorithmic approaches to solving short-term scheduling problems). These processes can occur by day, by shift, by hour, or even less.

  In addition, the Master Schedule interacts with processes for distribution center (DC) replenishment; it receives demands from the DCs and plans the availability of product for them.

[2] In the jargon of the trade, this is referred to as the "Planning Time Fence."

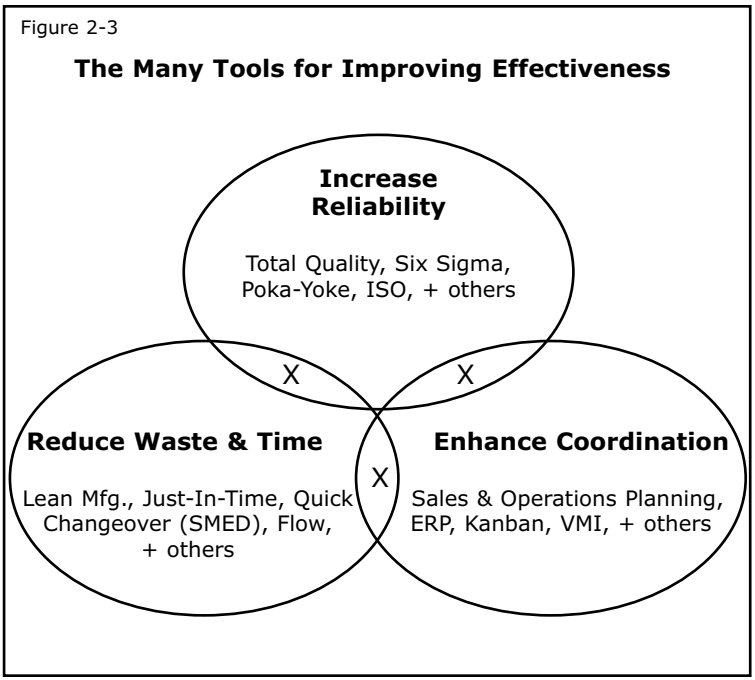
Where Sales & Operations Planning Fits

Fifty years ago, very few tools existed to help people manage their businesses better. Since then, an abundance of superb tools has been developed: Total Quality Management/Six Sigma, Just-In-Time/Lean Manufacturing, Manufacturing Resource Planning/Enterprise Resource Planning, and many others.

That's good news. The problem is that the sheer volume of these tools is a bit overwhelming. Where do these tools fit? Which tool does what?

Our colleague, Chris Gray, has a good way of simplifying this. He categorizes the tools by their mission: increase quality, reduce waste, and enhance coordination. See Figure 2-3.

Figure 2-3



Here we can see that the mission of Six Sigma is to increase quality, that Lean Manufacturing's job is to reduce waste and time, and that Sales & Operations Planning is primarily a tool to enhance coordination. And of course, the Xs in the diagram show that there's overlap among the three toolsets: if you increase quality, you'll reduce waste – and so on.

"Connecting the Knobs"

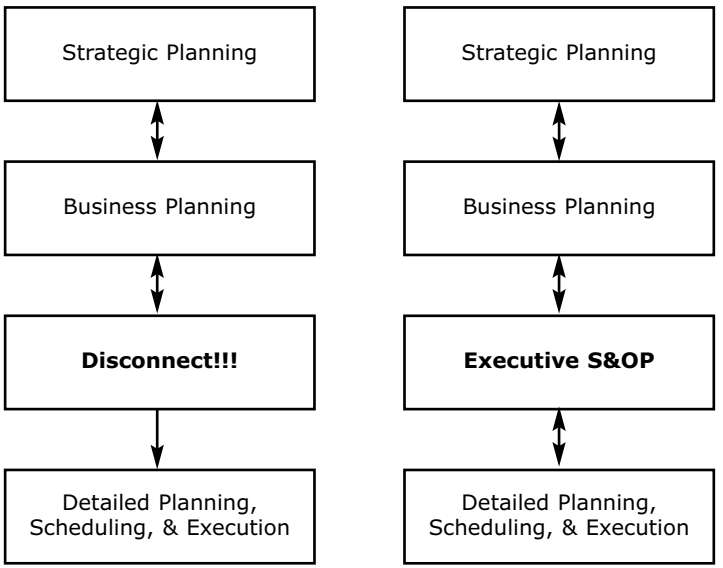
The vice president and general manager of a $2 billion per year consumer goods business had an interesting way of putting it. He said, "Before we had Executive S&OP in the company, I spent a lot of my time *turning knobs that weren't connected to anything*."

What he was saying is that the decisions he made at his level may or may not get transmitted down to affect directly what happens in the customer order department or on the plant floor, the receiving dock, and most important of all, the shipping dock. Or, if they did get communicated, they might get garbled on the way down. Or two or more other things might get messed up in the process. There was a disconnect in the process. See the left side of Figure 2-4.

He went on to say, "This process connects the knobs." Executive S&OP links the top level strategic and financial plans of the business to the week-to-week, day-to-day, or shift-to-shift activities of acquiring material, converting it into finished product, and shipping it to customers.

Figure 2-4

Where Executive S&OP Fits



FAQ: *Why shouldn't Executive S&OP work with mix instead of volume? After all, mix is specific products – it's what we ship out the back door. That sounds more important.*

This question gets to the heart of what Executive S&OP is and is not. It is most definitely not a short-run scheduling and expediting tool. Rather, it's a medium- to long-range planning process; it's directional, not detailed. Remember, volume drives mix just as demand drives supply.

In addition to that, here's a more specific reason: executives simply don't have the time or the desire to get involved in large amounts of detail. And they shouldn't have to. That's not their job. That's the job of people who work in places called Planning, Supply Chain, Logistics, Purchasing, and so on.

A third reason: for medium- to long-range planning – months 2 or 3 through months 15 to 18 – it's possible to generate detailed demand and supply plans that far into the future, look at them, approve them, and then sum them up into aggregate numbers. The problem is that this is almost always *less accurate* and *more work* than projecting the aggregate numbers into the future. The aggregate numbers can then be used to derive whatever detail is needed – and that normally isn't much.

Coming up in the next chapter: a sad, twisted tale entitled "Bad Day at Acme Widget."