

Section 1

Introduction

Over the last half century, a large number of tools and techniques have been developed to help manufacturing enterprises run better, to operate more efficiently and effectively. That's good. What's even better is that virtually all of these tools are effective. They work. They truly do help companies run better.

One downside to this is the sheer number of these tools: there are so many that it's sometimes difficult to figure out which tool does what and where they fit into the overall scheme of things. Our colleague Chris Gray has an excellent way of looking at this. He sorts the tools into three stacks: tools to increase reliability, tools to reduce waste and time, and tools to enhance coordination.

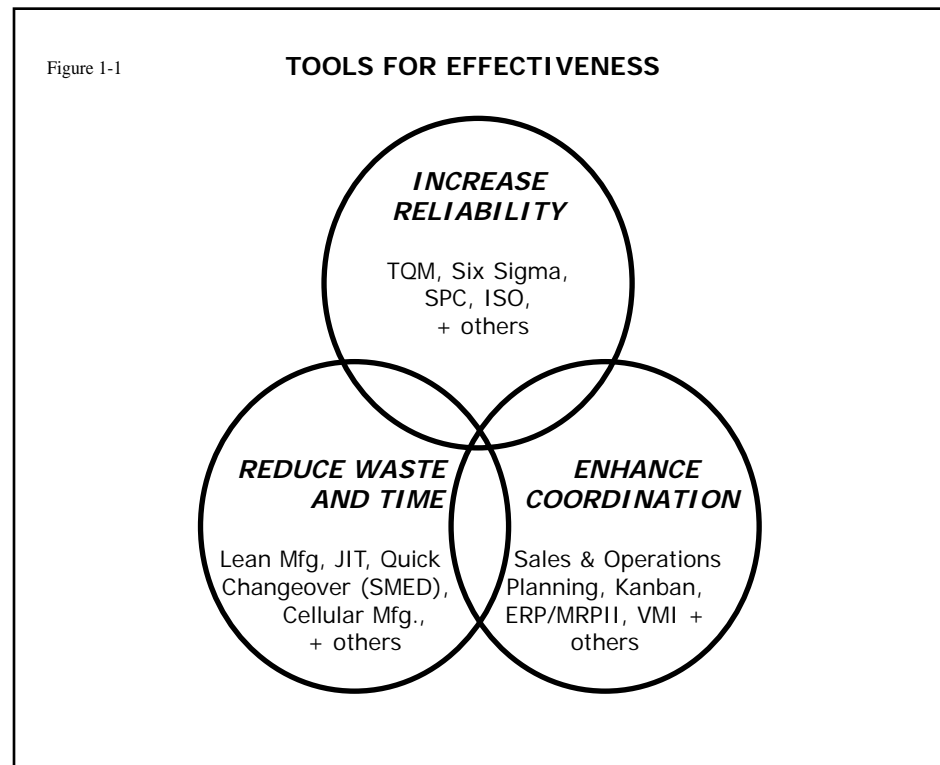
Where the Tools Fit

In Figure 1-1, developed by our colleague Chris Gray, we can see that Sales & Operations Planning (including Sales Forecasting and Master Scheduling) along with others are classified as tools to enhance coordination. They help to balance demand and supply across the supply chain.

Now let's ask ourselves a question about these coordination tools: how necessary are they? How badly do companies need them? And the answer is: it depends. It depends on two things, one being the complexity of the business and the other the rate of change within the business.

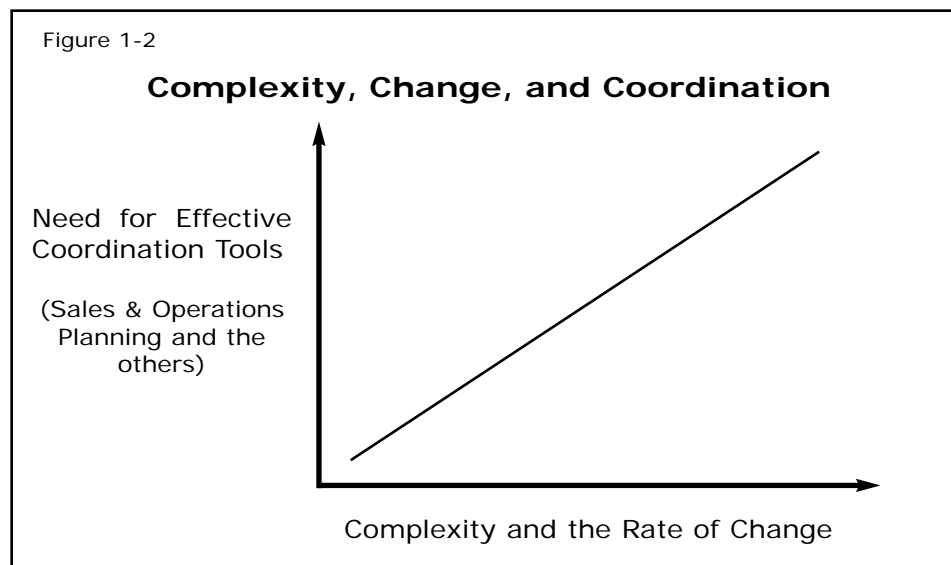
Complexity and the Rate of Change

Figure 1-2 depicts this. If a company's environment – products, processes, customer base, supplier base, and so forth – is extremely simple and, if things hardly ever change, then they probably don't need much in the way of coordination tools. Seen many companies like that lately?



First, let's look at complexity. There are opposing forces at work on many companies today.

- Thanks to Lean Manufacturing, many companies have been able to dramatically simplify their operating environment. This can eliminate the need for some of the more complex parts of the traditional ERP/MRP/II tool kit: shop floor dispatching and detailed capacity requirements planning are two that come to mind. They're no longer needed in the new, simplified environment. Thus the overall set of planning tools can become simpler.
- Pressing in the opposite direction, towards more complexity, is Supply Chain Management. Trying to manage an extended supply chain – out to perhaps the customers' customers and the suppliers' suppliers – is a more complex task than looking primarily within the plant and the immediate suppliers.
- Also raising the complexity factor are global sourcing of components and the extensive use of contract manufacturing. It's substantially more challenging to deal with suppliers of finished products and components located half a world away than with those located next door, or in the next town or the next state. The checklists in this workbook reflect those developments.



In general, therefore, most businesses are getting more complex, not less.

Second, regarding the **rate of change**, all that needs to be said is that we're in the twenty-first century, where change is a way of life. The rate of change continues to accelerate. Who knows when it will slow down?

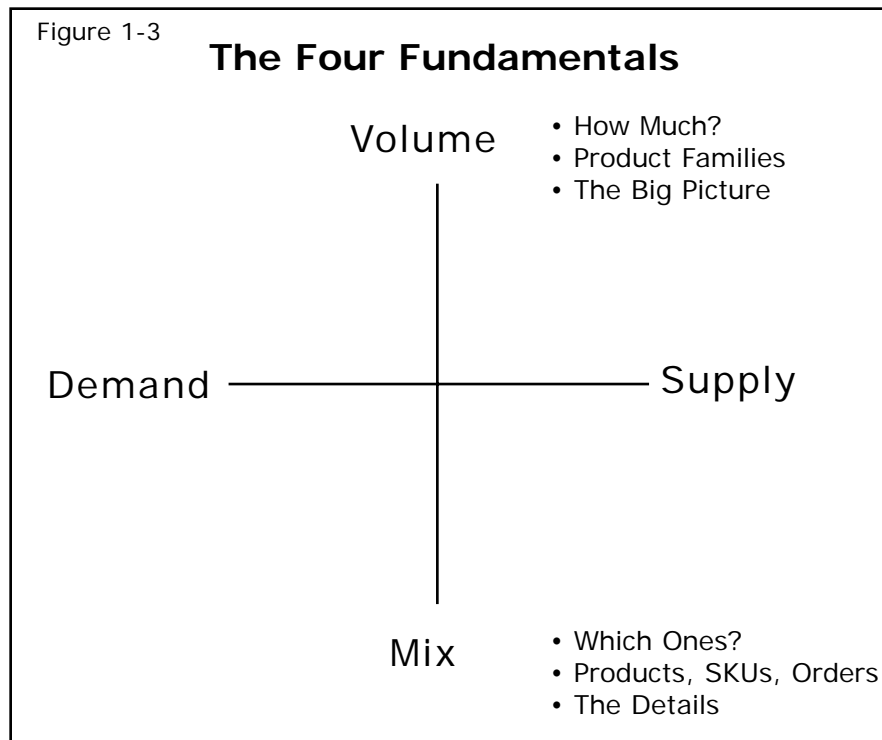
Therefore, we can conclude that these coordination tools – Sales & Operations Planning and the rest – are essential for most companies. They will grow even more important in the coming years, as complexity and the rate of change continue to increase.

The Four Fundamentals

Let's take a look at what we call the *four fundamentals*. They come in two pairs: demand and supply, volume and mix.

To run a business well, *demand* and *supply* must be in balance at both the *volume* and the *mix* level, as indicated in Figure 1-3.

Sales & Operations Planning is a set of tools to balance demand and supply. Executive S&OP operates at the volume level; it deals with rates of sales and production, and aggregate inventories and backlogs. It is typically expressed in product families or other aggregate groupings; it answers the question “how much;” it gives the big picture.



Master Scheduling's task is to balance demand and supply at the *mix* level. It's concerned with which individual products to run first, second, third and which customer orders will ship when. It answers the question “which ones”; it's the details.

These words, and the drawing in Figure 1-4, are saying that Executive S&OP and Master Scheduling are *not* the same thing. They're different tools for different purposes.

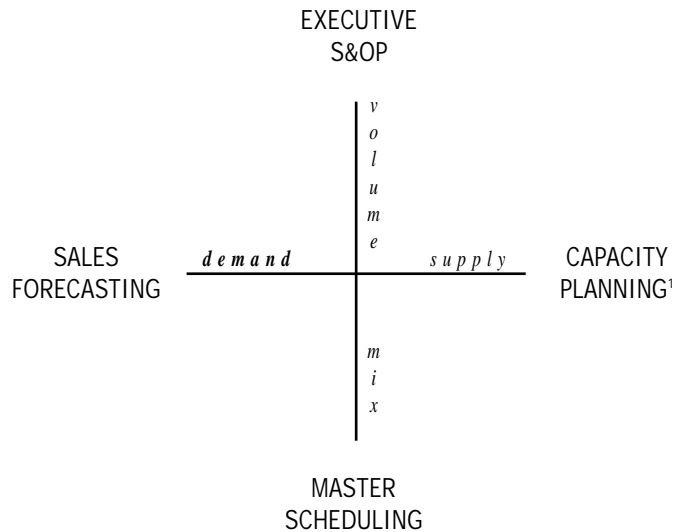
Linkage – Volume and Mix

However, even though Executive S&OP and Master Scheduling are different things, they must be in agreement. The sum of the demand and supply detail in the Master Schedule must tie back to aggregate demand and supply data in the executive-authorized Sales & Operations Plan.

When they don't agree, there's a *disconnect*. The plans that Executive Management has authorized in Executive S&OP

Figure 1-4

The Four Components of Sales & Operations Planning



are disconnected from the plans contained in the Master Schedule, which drive what happens day-to-day and week-to-week on the shipping dock, the plant floor, the receiving dock, and the customer order department.

So, an integral part of an effective overall S&OP process is to have Executive S&OP and the Master Schedule – two different things – in a high state of agreement with each other. Joined at the hip, so to speak.

Linkage – Units and Dollars

Another important mission for S&OP is to tie together the company's operational plans with its financial plans. There must be *coherence* between the two.

The financial plans represent, for most companies, critically important commitments to deliver X amount of revenue and profit dollars for the quarter and the fiscal year. These commitments are made to some very important people: to the corporate office; to the board of directors; to Wall Street; and ultimately to owners of the business: the stockholders.

The operational plans focus on things like procurement, production, sales, inventories, customer backlogs, and the like. When these operational plans are not aligned with the business and financial plans, there is another disconnect. This one is between what the company has promised to its core constituencies and how it's operating the business. Not a good thing.

With this background, let's look next at the specifics of how to use the checklists contained in this workbook.

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¹ Capacity Planning appears on these diagrams, but has no separate checklist. This is because the Capacity Planning function is an integral part of both Executive S&OP and Master Scheduling.