

## Sales and Operations Planning: Transformation From Tradition

*by Lora Cecere, Jane Barrett, and Hussain Mooraj*

With the recession, all bets are off. Traditional supply chain processes that rely on historic orders can be thrown out the window. For this reason it is more critical than ever for cross-functional teams to work together to sense, shape, and drive a profitable demand response. Demand-driven leaders use sales and operations planning to make this happen. In this Report, we share S&OP insights—lessons from leaders, best-in-class processes, and pitfalls to avoid—based on five years of research on how to achieve demand orchestration.

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*The Bottom Line: Demand-driven leaders use sales and operations planning to create organizational alignment with the operating strategy that improves revenue, decreases inventory levels, and reduces costs.*

Five years ago, a number of companies taking the traditional approach for sales and operations planning (S&OP) asked AMR Research for help. The companies felt that their organizations were stuck in a rut, not maximizing true S&OP potential. They were right. The concepts of one-number forecasting and matching demand with supply were outdated. This request was the catalyst for interviews with over 80 companies, culminating in our first series of reports.

The value is striking. A successful demand-driven S&OP initiative can improve revenue from 2% to 5%, reduce inventories by 7% to 15%, and improve the success of new product launch commercialization by 20%. For cash-strapped companies, these business benefits can be crucial to helping them through the recession.

However, this level of benefit cannot be accrued from traditional S&OP processes. In strategy days with more than 150 companies over the last five years, we have seen a redefinition of sales and operations planning, one that is substantially different than the traditional approach of matching supply with demand.

With this transformation of sales and operations planning to drive this higher level of business value, we have also seen a resurgence of interest. Spurred on by the economy and a general need for better alignment, planning, and visibility, organizations are seeking to

improve their capability to sense demand and translate demand patterns into an actionable, profitable operational plan. In this Report, we share our insights.

## Demand-driven leadership




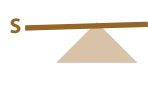
Traditional S&OP processes were defined in 1987. The goal of the traditional approach is to match demand with supply.

Supply chain excellence is defined as the right product at the right place at the right time. The problem is that the participants in this process are blind to profitability or market potential. Worse, they do not know if plans are feasible or the best approach. Companies become better at taking orders as a result of the traditional view of sales and operations planning, but three pitfalls still exist:

- Missing market opportunities
- Lack of synergy—and often polarization—between commercial team decisions (sales and marketing) and those of operations
- Chasing unprofitable orders

Leaders have transformed these processes, with the goal to maximize market potential while mitigating risk, to focus on demand sensing, shaping demand, and driving the best demand response for profitability based on conscious choice. The model in Table 1 outlines this journey.

**Table 1:** The journey for demand-driven S&OP transformation

Stage	1 Reacting	2 Anticipating	3 Collaborating	4 Orchestrating
Balance: S&OP				
Goal	Development of an operational plan	Demand and supply matching	Profitability	Demand sensing, and conscious trade-offs for demand shaping to drive an optimized demand response
Ownership	S = Sales  OP = Factory capabilities	S = Sales and marketing plans  OP = Planning and factory capabilities	S = Go-to-market plans  OP = Design of demand-driven plan, make, and deliver processes	S = Go-to-market strategies and solutions  OP = Translation of demand into plan, make, deliver, source, and service strategies, with connection to execution
Metrics	Order fill rate, asset utilization, inventory levels	Order fill rate, forecast error, inventory turns, functional costs	Demand error, customer service, working capital, total costs	Demand risk, customer service, cash flow, market share, and profit

————— Increase in Organizational Balance —————>

*Source: AMR Research, 2009*

### Four step, six step, nine step, go

More than 85% of companies have an S&OP process, but few are alike. Amid such variance, how can companies sort through to determine best practices and align these practices to gain the benefits?

Despite differences in the specifics, those who have succeeded have good answers to three key questions:

- What is the goal of S&OP?
- What does good look like?
- How is the plan executed?

In most organizations, goals are not clear, metrics are not aligned, and while planning occurs, it is seldom connected to S&OP execution. This is a setup for frustration and missed opportunities.

The devil is in the details. Adding complexity, those details tend to change. The process has shifted from a four-step process of balancing demand and supply in the early 1990s, to a collaborative six-step planning process in early 2000, to today's nine-step process to maximize opportunity, minimize risk, and make con-

scious trade-offs based on profitability.

This nine-step process is the standard operating plan for demand-driven leaders. However, 80% of companies we work with are still struggling to get the four- or six-step process right. To kick-start the journey and help companies get their feet firmly on the ground, we developed a test for self assessment (see "Take the Test: How Demand-Driven Is Your S&OP Process?").

#### *The nine-step process*

**1. Collect sales and market input.** Collect data from sales and marketing through collaborative forms. Accept input from a filter that is based on historic input bias. Focus on competitive analysis, multi-tier value networks, and key customer purchasing behavior patterns.

**2. Develop a demand plan.** Use statistical analysis and/or management input to build a multi-period forecast plan, consolidating multiple sources of demand. Leaders use range forecasts, attribute-based forecasting techniques, and forecast risk.

**3. Demand consensus refinement.** Compare the multi-period output of the statistically generated forecast to the collective sales forecast and key channel partner forecasts to analyze and understand exceptions. Use the outcome of this collaborative forecast as the base forecast for demand shaping in Step 4. The best include interactive scenario management.

**4. Shape demand based on what-if analysis on demand for supply.** Develop unit and financial demand plans and analyze lift for demand shaping, including promotion planning, price management, contract compliance, and the timing of new product introductions. Use competitive market intelligence to beat the competitor to the customer. Package these key scenarios with the base-level forecast for operational planning in Step 6.

**5. Develop a constrained plan by supply.** Using the forecasting output generated in Step 3, analyze the best alternative for the business based on return on assets (ROA), profitability, revenue, customer service, and working capital. Clearly identify constraints, demand shortfalls, and capacity opportunities for the consensus meeting review. Leaders build agility and flexibility into product supply to minimize the impact of forecast error.

**6. Conduct a what-if analysis by supply to determine trade-offs on the measurements and identify demand-shaping opportunities.** Evaluate the what-if demand shaping in Step 4 based on profitability, revenue, customer service, and working capital. Clearly identify constraints, demand shortfalls, and capacity opportunities for the consensus meeting review. For a global S&OP process or a matrix-driven organization, this is an iterative cycle.

**7. Review and gain agreement through a consensus meeting.** Review scenario alternatives and gain consensus on the operating plan. Leaders use these meetings to make decisions around pricing and capacity trade-offs. Executive leadership needs to take a strong role to guide the organization through functional trade-offs.

**8. Publish the constrained plan.** Communicate the constrained plan to the global operational teams and finance for execution.

**9. Measure and communicate the plan.** During the month, measure the success of the plan, and use this learning as the starting point of the next cycle. Measure the plan success by cash flow, forecast accuracy, expected versus actual profitability, expected versus actual revenue, expected versus actual inventories, and expected versus actual customer service (e.g., perfect order).

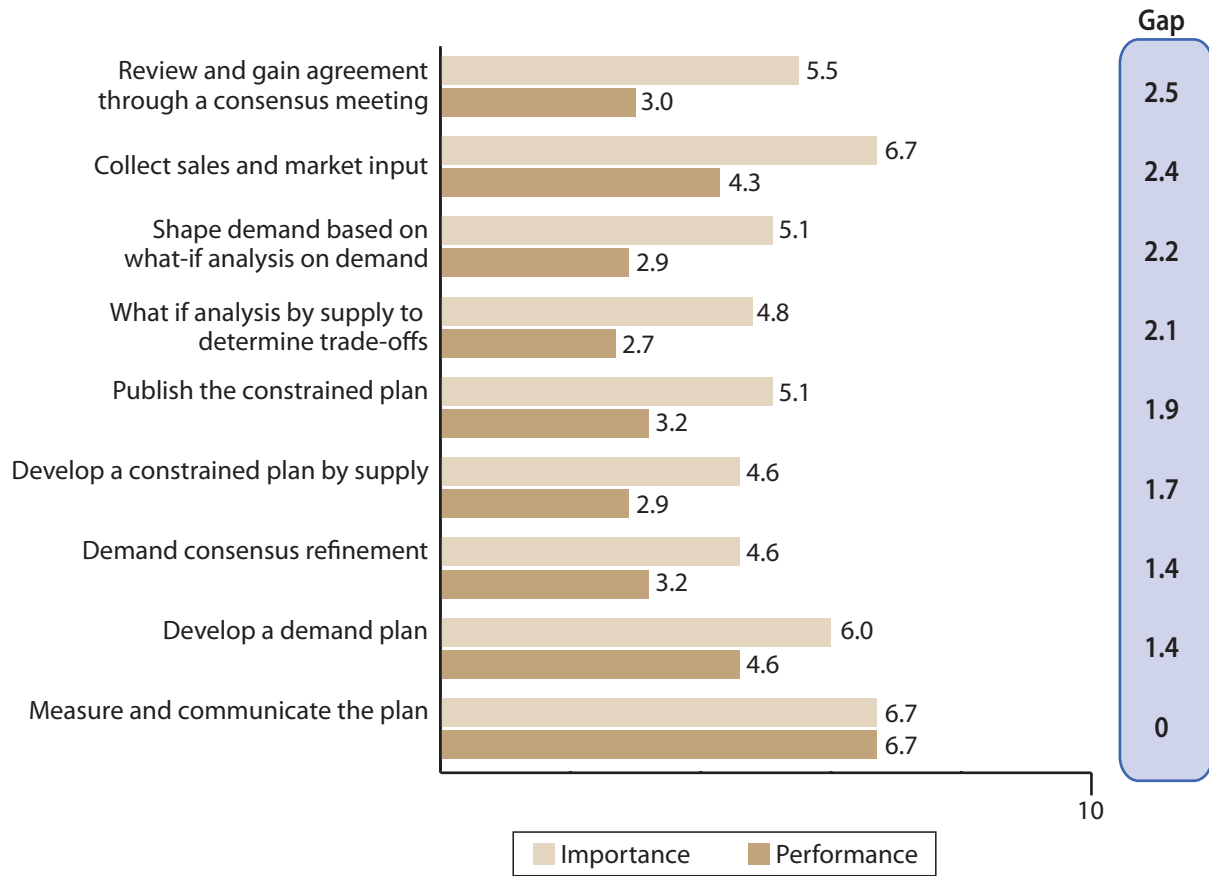
The gaps in the process vary by industry, with many companies struggling with the first three steps of the process. Companies are more advanced in supply than demand-based processes (see Figure 1).

**Table 2:** The evolution of S&OP processes

1990s	Early 2000	Demand-Driven Leaders
Develop a demand forecast	Collect sales input	Collect sales and market input
Balance demand with supply	Develop a forecast	Develop a demand plan
Consensus meeting	Shape demand consensus refinement	Demand consensus refinement
Publish the plan	Develop a constrained supply plan	Shape demand based on what-if analysis on demand for supply
	Review and gain agreement through a consensus meeting	Develop a constrained plan by supply
	Publish the plan	Conduct a what-if analysis by supply to determine trade-offs on the measurements and identify demand-shaping opportunities
		Review and gain agreement through a consensus meeting
		Publish the constrained plan
		Measure and communicate the plan

Source: AMR Research, 2009

**Figure 1:** S&OP capabilities—process gaps



Q: How important are each of the following S&OP capabilities to the success of your company's business strategies in 2007, using a 1–10 scale where 1 = not important at all and 10 = extremely important. Additionally, rate how well your company performs today on each of these capabilities, using a 1–10 scale where 1 = not well at all and 10 = performs extremely well.  
n = 101

Source: AMR Research, 2009

### Avoiding the pitfalls

So you're on your nine-step journey. Now, rubber hits in the road in implementation. Companies intuitively get this, yet many still venture down the wrong path. How do you manage the transformation and keep your organization on course? Demand-driven leaders have treaded carefully through the following areas:

#### Consultants are not created equal

Most consultants that we follow in the industry are schooled in the traditional approach of sales and operations planning and lack the understanding of how to power a demand-driven transformation. Clients have had the best luck in S&OP transformation with

boutique firms like **Celerant**, **Clarkston Consulting**, **Hitachi**, **On-Point Group**, **S&V Management Consultants**, and **Spinnaker** or larger firms like **Deloitte** or **IBM Global Services**. Avoid the traditional approaches of **Oliver Wight** and **TF Wallace**.

#### Move from unconscious to conscious choice

Goal alignment does not just happen: it must be orchestrated. The focus of sales and operations planning needs to be the delivery of the operating strategy, but in 85% of the organizations we work with, the operating strategy is not clear. As a result, companies have difficulty making conscious choice on costs, customer service, and inventories.

The situation is complicated by the changes in supply chain processes over the past 25 years. No two S&OP processes are alike. Be clear on process and goal in your company. The greatest results happen when there is a focus on business drivers, business plan sensitivities from what-if analysis, and agreement on common business assumptions. Consider the case of **Del Monte**, which used its S&OP process to better translate demand to reduce waste and improve replenishment.

### *Organize around groups that can make the decisions*

Sales and operations planning is not just a supply chain process. Instead, it ties to the delivery of the operating strategy. It needs to be championed by a cross-functional team (marketing, sales, operations, supply/procurement, finance and R&D) of senior executives. But, at the end of the day, the team needs to be clear on how decisions will be made.

In most organizations, the profit center manager is the ultimate decision maker who drives the right balance between go-to-market strategies and supply. It is about conscious choice and alignment of the business leaders on the best scenario to mitigate risk and maximize opportunity. Consider **Samsung**, which has zero tolerance for inventory obsolescence. The profit center manager makes quick decisions on the best way to exhaust the inventory to prevent obsolescence.

### *Condition the team*

Successful S&OP projects focus 50% of their efforts on change management, 40% on process alignment, and 10% on the implementation of technology. The obstacle is helping people get past false impressions of sales and operations planning.

The greatest cultural barrier to overcome is the role of finance, particularly how to use the financial budget in the development of the plan. In demand-driven sales

and operations planning, the budget is an input into the development of the plan, but it does not constrain the plan. Start early to train finance. Consider the case of two chemical companies. One is focused on business drivers in the definition of SWAP plans based on market potential. The other constrains the S&OP process by budget inventory levels. The first company is in the top 50 of the AMR Research Supply Chain Top 25. The second? In the bottom 500.

The second largest cultural barrier is the role of sales. A common mistake in sales and operations planning is the belief that sales knows what the organization should be selling. This approach is naive since sales groups are coin operated: heavily incented by bonus programs. As a result, the sales forecast typically has a large bias and error component that must be accounted for in the design of consensus-based forecasting.

We spoke to two shoe companies about the role of sales in their organization. One company became demand driven based on outside-in forecasting using the demand signal from their largest retailer, **Payless Shoes**. The other relied solely on the input of their sales team, selling to stores like the **Federated Department Chain**. The first company was 15 days better than the peer group in working capital while the second was 59 days worse than the peer group.

### *Recognize regional differences*

In most industries, North American teams are two to three years ahead of Europe in S&OP refinement, with other regions lagging. The secret is training, as the case study of **Procter & Gamble (P&G)** makes clear. For many years, we have watched Dick Clarke at P&G work on consistency of forecasting processes and the reduction of bias and error between regional inputs. This focus on team development, process consistency, and reducing bias and error exemplify the right stuff to bridge the gap.

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## **Five common misconceptions**

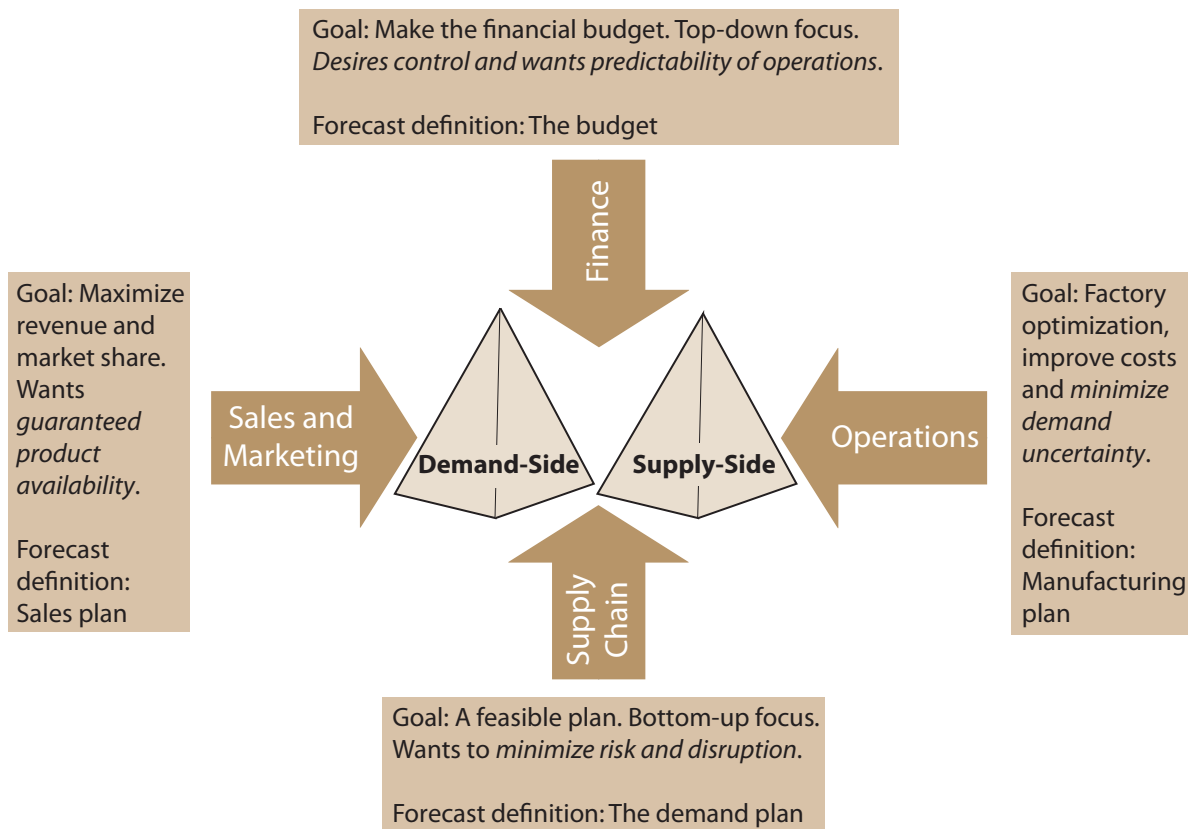
- One-number forecasting is the goal of a good process.
- If you want to know how much you are going to sell, just ask sales.
- Sales and operations planning is a project.
- Orders represent true demand.
- Sales and operations planning is easy.

## Characteristics of a successful S&OP transformation

The most successful S&OP processes come from the top down. In our research, only one company was successful in driving balance in S&OP processes from the bottom up. These successful S&OP processes have nine common characteristics:

- **Balance**—The most advanced S&OP processes achieve balance between “S” and “OP.” While these definitions change based on maturity, remember that the “S” in S&OP means sales.
- **Call to action**—A compelling event drove action for the most successful companies. Common catalysts include a major product shortage, a move to contract manufacturing, a merger, an acquisition, or competitive market threats. Today, the economic downturn is the compelling event for many. It is driving companies across industries to transform sales and operations planning to improve cash, sense the market, and in some cases just survive.
- **Executive sponsorship**—Almost every company in advanced stages of being demand driven had strong executive sponsorship. The need for executive sponsorship varies: the larger the company and the more complex the political environment, the greater the need for strong executive sponsorship.
- **Outside in**—The most successful S&OP processes focus on the channel, with continuous improvement efforts on demand sensing, demand shaping, and profit maximization taking into account the investment needed to make the profit.
- **Technology designed to enable collaboration**—To support different role requirements in demand consensus processes, redefine demand hierarchies (see Figure 2) for event-based monitoring. Companies that miss this hierarchy definition sometimes fall into the trap of defining demand hierarchies with only supply-side views (ship-from location definitions). When this happens, demand sensing and shaping are curtailed.

**Figure 2:** Technology to enable collaboration



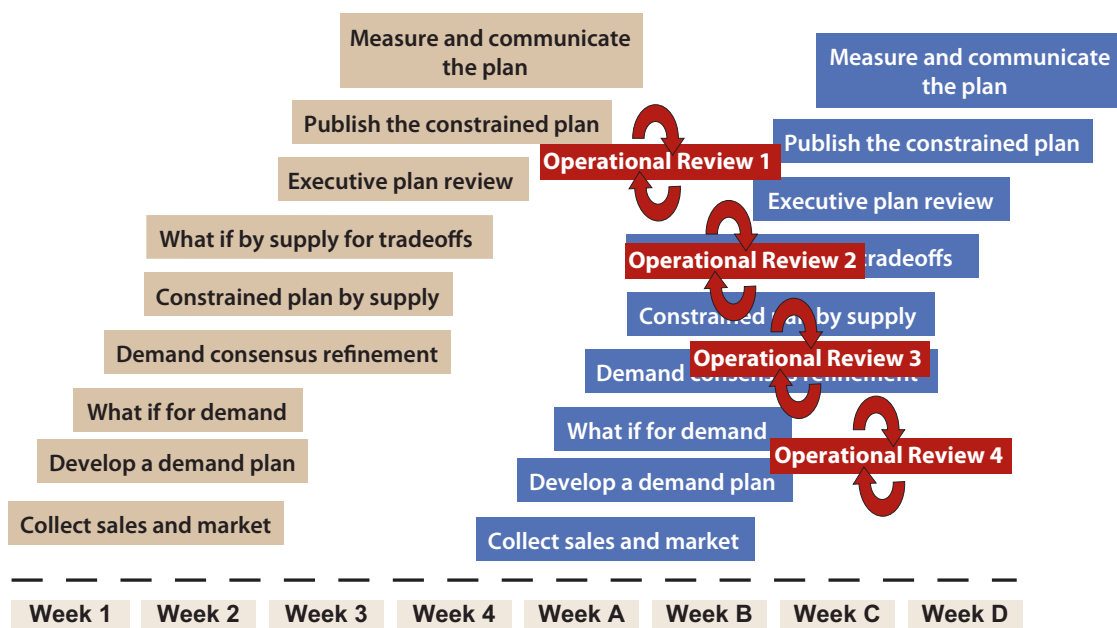
Source: AMR Research, 2009

- **Shared and aligned metrics**—S&OP team members must be jointly accountable for shared and common metrics aligned to an agreed vision of success. Five that we find the most useful and common are forecast accuracy, perfect orders, revenue, profitability, and inventory. (The most successful teams place emphasis on these metrics in the order stated.) A common mistake is to measure too many metrics.
- **Governance**—Great processes have disciplined governance. They measure the bias and error of forecast changes and overrides and have tight control of planning master data.
- **Planning linked to strategic decision making**—In mature companies, the goal of sales and operations planning is now broader than driving what manufacturing should make. Many advanced companies are using the S&OP process to drive scenario planning back through economic what-if analysis in the recession to formulate strategies for the elongated U and L scenarios. The close tie of sales and operations planning to corporate economists and strategic procurement is a characteristic of S&OP maturity.
- **Planning linked to execution**—Most companies struggle to link the outcome of S&OP planning to action. When 40 supply chain professionals from the AMR Research Supply Chain Peer Forum were asked, “How do you connect S&OP to execution?”

only 2 companies had an answer. Here are five ways to make the linkage:

1. **Visibility**—The S&OP plan and outcome of the executive meeting are published and communicated to the operational teams globally within days of the monthly meeting.
2. **Monthly planning tied to weekly operating reviews**—A small, cross-functional team monitors progress on plan assumptions and guides the organization through plan execution with weekly focused operational reviews.
3. **Connection to order-to-cash processes**—Through the weekly operating reviews, decisions are made on allocation and available-to-promise (ATP) rules.
4. **Translation to go-to-market activities**—For demand orchestrators, the connection between market potential and supply commodity management through S&OP delivers great value. Benefit stems from the connection of demand-shaping activities to commodity strategies.
5. **Sensing and eliminating waste**—Sensing slow and obsolete (SLOB) inventory quickly and moving it when the inventory has maximum value is a defining characteristic. In successful organizations, there is almost an obsessive focus on SLOB. It is quickly identified and plans are formulated in the S&OP to maximize value by moving it quickly through the channel.

**Figure 3:** Connecting planning to execution



Source: AMR Research, 2009

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## Integrated business planning

The goal of many companies is integrated business planning. While integrated business planning lacks a common definition in the market, the most successful companies focus on the integration of process versus the integration of numbers. For example, in a mature company, the focus is agreement on a common plan, not a one-number forecast. There is a focus on the consideration of inputs into budget refinement, but the S&OP plan is seldom constrained by the budget. Tight integration of the financial budget to the S&OP planning process is a recipe for disaster.

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## Industry-specific requirements

As business leaders have focused on more demand-sensing and demand-shaping activities, S&OP processes have morphed by industry. Understanding these differences is key when benchmarking practices across industries. Each industry has different drivers, relies on different demand-shaping mechanisms, and is at a different state of maturity. The industries are listed in order based on S&OP maturity.

### Chemicals

Process companies use sales and operations planning to shape demand to asset utilization. This includes price optimization to develop price elasticity curves to outline price-volume trade-offs, integration with both sell-side and buy-side contract compliance to assess contract compliance risk, plans to sell excess capacity in lean times and profitably allocate capacity in boom times, and the identification of a trading plan. The trading plan details which products need to be manufactured or bought as finished goods from other chemical suppliers to satisfy contractual needs. North American chemical suppliers are often leaders in S&OP to develop plans to swap assets, using one company's assets to make the products for a second to maximize asset utilization. The primary demand-shaping mechanism is price management.

### High tech

Leaders in high tech involve their suppliers and channel partners in S&OP meetings to sense demand fluctuations. High-tech companies are highly incented to get it right. This is the second-best industry in S&OP processes.

Because of short lifecycles and high margins on product launch, they align closely with finance to minimize inventories and manage cash flow, and design replenishment networks to improve speed to deliver capabilities. Emerging market opportunities are analyzed by integrating total cost of ownership models, consumer demand patterns, and risk management into the S&OP discussions. The primary demand-shaping mechanism is new product launch.

### Consumer products

Leaders in this industry use sales and operations planning to determine effective promotion strategies, sense consumption through store clusters and point-of-sale (POS) data from vendor-managed inventory (VMI), and time new product launch activities by account. They identify S&OP as a key process to improve time to market for new product launch activities and as a means to align cross-functional teams on market opportunities.

While CP companies were early leaders in the use of supply chain planning technologies, they lag other industries on the development of demand-driven S&OP processes. The primary demand-shaping mechanism is trade promotion activities.

### Industrial manufacturing

Sales and operations planning helps translate demand into profitable supply plans, vital for a material and labor intensive industry like industrial manufacturing. Best-in-class companies use sales and operations planning to gain visibility into multiple sources of demand for complex products.

They have elevated the S&OP process to the product line or divisional level where resources are shared, and built supply agility capabilities through lean, postponement, modular design, VMI/supplier-managed inventory (SMI), global logistics, and supplier collaboration. In this industry, profit centers determined by asset groupings, often at the plant level, are the biggest barriers to effective sales and operations planning.

## Life sciences

Through sales and operations planning, life sciences companies can take on more risk, handle lower inventory levels, and better prepare for new product launches from competitors. This frees up valuable working capital, which can be used for acquisitions or funding R&D. Sales and operations planning helps drive more successful new product launches by working in close conjunction with the commercial organization. New products are vital as they replenish revenue that is being wiped out because of patent expirations in the case of pharmaceutical. In the case of medical devices, they're the biggest contributor to the bottom line.

Because of a history of high margins, life science companies lag most industries in the development of demand-driven value chain processes. This industry has higher inventories and less capability in supply chain planning than other industries listed. The primary demand-shaping mechanism is new product launch or preferred formulations.

## Aerospace and defense

In A&D, program management, especially with the movement to performance-based logistics (PBL), is picking up some of the characteristics of sales and operations planning, but the practices are evolving. It is more mature in aerospace than defense. Because defense projects are driven by a well-defined schedule and rigid cost/price negotiation with built-in penalties, they lack motivation. This is changing as cost and schedule overruns drive program cancellations. One A&D company that we follow is experimenting with a process it terms *demand and operations planning* (D&OP) in its aftermarket service business.

## Healthcare providers

Hospitals are in the nascent stages of adopting S&OP processes. The spectrum of maturity varies greatly, with the focus being mostly on reducing costs. Very few healthcare systems develop a demand forecast, and even fewer measure forecast accuracy. Leaders are starting to develop capabilities in this area to be able to work closely with suppliers to lower costs and improve patient outcomes. The primary demand-shaping lever is price.

## Retail

Retail is the least mature industry in the development of S&OP processes. The best companies do a mixture of top-down and bottom-up planning. High-level sales and margin plans are developed at the department level and then decomposed to the store. Store managers usually have some input into the reality of the plans and can provide limited input. S&OP excellence is an opportunity for retailers. Two areas of pain are the immaturity of retail forecasting processes and the lack of maturity of retailers in reconciling store POS data and warehouse withdrawal information. The primary demand-shaping mechanism is merchandising.

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AMR Research, Inc.  
125 Summer Street  
Boston, MA 02110  
Tel: +1 (617) 542-6600  
Fax: +1 (617) 542-5670

