



DDSN for Discrete Organizations, Part 2: S&OP and Forecasting

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Part 1 of this series introduced the product and supply chain complexity and risk a solution-based, manufacture-to-order (MTO) or engineer-to-order (ETO) company faces throughout the organization. This article will focus on strategic business planning—normally called sales and operations planning (S&OP)—and forecasting, based on the recent increase in inquiries related to demand management AMR Research is receiving from manufacturers.

Sales and operations planning

S&OP currently tops the list as one of the most active topics clients discuss with us, and this high level of interest is substantiated by the consulting firms we talk to. Why the upsurge of interest?

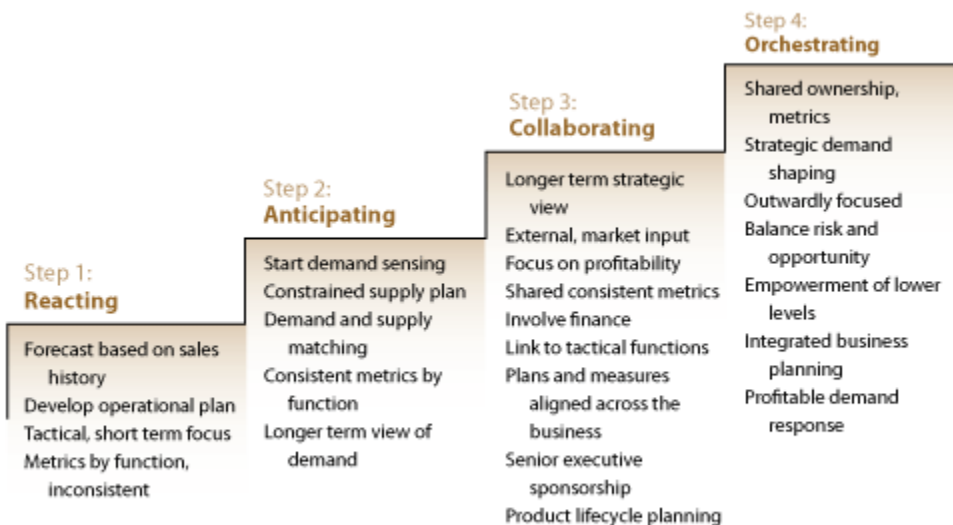
S&OP is a cross-functional consensus process that integrates customer-focused marketing plans for new and existing products with supply chain management. The process is performed with formal cross-functional meetings (with sales, marketing, and operations, at a minimum) at least once a quarter (but preferably monthly), and reconciles supply, demand, and new product plans.

Executed properly, the S&OP process links the business strategic plan with its execution and reviews performance measurements for continuous improvement. It is quickly emerging as the focal process for driving business performance improvement and the inherent tradeoffs executives must make when balancing risk, complexity, and opportunity in a global enterprise.

From our benchmarking studies, we find substantial variation in the effectiveness of companies' S&OP processes, as evidenced by their performances on two of the key metrics that point to the success of the process: demand forecast and the perfect order. While the majority of companies we've benchmarked report using an S&OP process for 100% of their business, forecast error ranges all the way from 2% to 52%, with perfect order performance ranging from 52% to 99%. This tells us that while everyone may be using the process, there's a lot of variation in how well they're using it. The resurgence of interest we are experiencing in our client interactions validates this.

AMR Research's demand-driven supply network (DDSN) model for MTO/ETO manufacturers describes four stages of maturity as companies enhance their S&OP structures and processes (see Figure 1).

Figure 1: Manufacturing: S&OP maturity model



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Source: AMR Research, 2007

How do companies evolve S&OP into the engine for business performance? There are emerging trends among leaders to add real-time sense-and-response capabilities to traditional batch-oriented planning and execution cycles, linking strategic planning processes like S&OP to tactical events that occur within and between enterprises in the value chain. Yet many organizations are still working through more basic challenges:

- Forecast volatility and variability
- Order changes in a project or ETO environment
- Lack of accountability and ownership
- Gathering and preparing data still a full-time job
- Too many meetings required in large matrix-driven organizations
- Uncertainty created with new product introductions
- Struggle to get to align plans and measures across the business

There are five primary metric areas that should be tracked to gauge the effectiveness of an S&OP process:

- Forecast accuracy
- Perfect order
- Inventory
- Costs (as a percentage of revenue)
- Revenue

S&OP best practices

From our research, we find the leaders focusing on the following S&OP best practices:

- Using a 3- to 36-month time frame, with a more strategic view
- Considering it their integrated business planning tool
- Including data such as new product introductions and market growth
- Using what-if scenarios and simulations to understand the potential impact of future events
- Aligning plans and measures across the business)
- Involving finance in the process
- Balancing risk and complexity in a global environment
- Linking S&OP to the more tactical functions
- Finding a well-communicated S&OP process that enables empowerment at a lower level in the organization

Upcoming S&OP sessions

Because of the current interest in S&OP, it will be a key topic at our Supply Chain Executive Conference to be held at the end of May, both in the Supply Chain Peer Forum Summit as well as in breakout sessions.

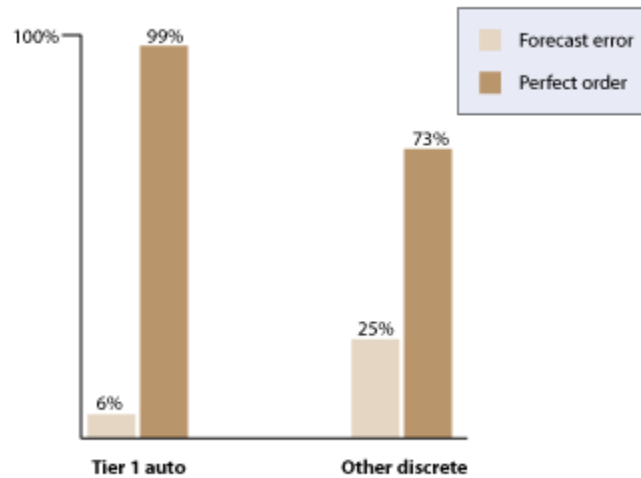
We are also conducting a study on S&OP practices amongst manufacturers. If you are interested in participating in the survey and receiving a report summarizing the findings, please contact Jane Barrett.

Forecasting

Along with perfect order performance and supply chain costs, forecast accuracy is one of the metrics we track to assess an organization's supply chain performance. For more on this, see "The Hierarchy of Supply Chain Metrics: Diagnosing Your Supply Chain Health."

We've seen through our benchmarking studies that, across industry, forecast accuracy is correlated with perfect order performance: companies that are better at forecasting tend to have better perfect orders. In the discrete group, we find that the best performers on both these metrics are the Tier 1 automotive suppliers, with forecast error for a one-month forecast averaging less than 10% and perfect order performance at 99% of orders. In contrast, median perfect order performance in other discrete industries is 73%, with forecast error at 25% (see Figure 2).

Figure 2: Discrete industries: forecasting and the perfect order



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Source: AMR Research, 2007

In a recent Supply Chain Peer Forum discussion held in January on demand planning, we identified the following across all industries:

- 70% of companies retain different forecasts (statistical, consensus, sales, marketing) and measure forecast error against those forecasts.
- 74% have sales teams forecasting at the account level for major accounts.
- Most companies are using a combination of technologies to forecast at the sales account and corporate level. Approximately half are using spreadsheets for forecasting at the sales account and corporate level, as well as S&OP. The other tools with reasonable usage are from **SAP, i2 Technologies, and Manugistics.**

The following are processes that can help MTO/ETO/project-based companies with demand forecasting:

- **Measure accuracy and bias**—Tracking bias, normally caused by sales optimism, can significantly improve forecast accuracy.
- **Manage the forecast and the pipeline**—Where large deals can cause significant demand variability, companies use both a forecast for products with some level of repetitive demand, as well as a pipeline database to track the status of potential large orders or projects in the sales funnel.
- **Use technology**—Tools are available that can provide attribute-based modeling and forecast at the component/dependent-demand level. Where there is a dependency on components and configurations, this can help predict the outcome.
- **Design for reuse**—Leverage the flexibility of common platforms to allow for late-stage product completion or final assembly to mitigate the risk of high volatility.
- **Compensation plans.** Link compensation schemes to forecast and pipeline responsibility, accuracy, and ownership to reinforce metrics. This should also improve communication between sales and operations.

Summary

The benefits of a mature S&OP and forecasting process are many. Tangible benefits are identified through financial performance, organizational alignment, and a more stable operating environment. However, the intangible or soft benefits, such as better internal communication, morale, and the development of a collaborative, disciplined culture, cannot be ignored in today's complex business environment.

We welcome your feedback—jbarrett@amrresearch.com.

Additional reading

- "Sales and Operations Planning: A Cornerstone of DDSN Leadership"
- "A Reader's Guide to Sales and Operations Planning"
- "DDSN for Discrete Organizations, Part 1: The Risk and Complexity Is Different"
- "How Do I know That I Have a Good Forecast?"
- "What is Demand Visibility?"
- "Rethink Demand Management"
- "Q&A: ADTRAN Discusses the Benefits of S&OP"
- "The Handbook of Sales and Operations Planning Technologies"