What Is S&OP?: It Is a Routine Tactical Planning Process to Match Future Supply and Demand

Agenda

• Importance of the Sales and Operations Planning (S&OP) Process

• How S&OP is done

• Success factors (including the planning hierarchy)

• Improving the S&OP process

S&OP had been ‘hot’ because of decades of growth in global trade and consumerism

• More global selling (internationally into multiple countries)
• More global sourcing (internationally from multiple countries)
• More fragmented supply lines (e.g., outsourcing)
• Longer supply lines and lead times (e.g. off-shoring)
• Rise of consumerism has led to more competitive environments to plan:
  – Broader product lines with more Stock-Keeping-Units (SKUs)
  – Shorter product-life cycles (with more fashion-oriented products)
  – More Mergers & Acquisitions to gain customers/products

• Greater uncertainty and risks including greater supply-side due to climate change (floods & tsunamis), overseas worker unrest, pirates, and politics such as the Arab Spring
S&OP Keeps the Bridge Between Demand and Supply-Side Management Open, Enabling 'Demand-Shaping'

Supply-Side Management
- Operations
- Logistics
- Supply Chain
- Procurement
- Finance

Demand-Side Management
- Marketing
- Sales
- Merchandizing
- Customer Service

DM Processes
Sales & Operations Planning

Minimize costs and inventories
Maximize revenues and margins

Maximize sustained profitability and other corporate goals


An Integrated Supply Chain 'Requires S&OP (with demand-shaping with supply in mind*)'

Aligning supply and demand plans helps ensure product availability with minimal waste and inefficiency

* L. Lapide, "Demand-shaping With Supply in Mind", Supply Chain Management Review, Nov 2013
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Semi-Conductor Company’s S&OP: A Typical Process

- Weekly Consensus Demand Review Meeting
  - Attended by Sales, Marketing and SC; often by COO
  - Output: Unconstrained Sales plan

- Weekly Supply Review Meeting
  - Attended by Finance, Manufacturing, and SC
  - Output: Constrained supply plan including outsourced capacity

- Monthly Executive Council Meeting
  - Attended by CFO, COO, VP Sales and Biz Mgrs
  - Output: Supply-demand gap including new capacities and buildups

- Process driven by Integrated Process Director from Supply Chain (SC)
- Plans by month for 18 months
- Improvements:
  - Automate to allow more demand-side planning focus
  - Incorporate demand uncertainty
  - Plan for external fabs and foundries
An S&OP Process Needs to be Driven by a Baseline Demand Forecast not a Sales and Marketing Plan

A plan is not a forecast and a planner is not necessarily a forecaster

So, an independent, unbiased, and professionally-run forecasting organization is needed to support an S&OP team

* L. Lapide, “Navigating a Course with Planning and Forecasting”, Supply Chain Management Review, May/Jun 2014

An S&OP Process Is Typically Driven by a Baseline Forecast Predicted on a Pre-Defined Demand Plan

- **Demand**
  - Baseline Demand Forecast
  - Must be estimate of true "unconstrained" demand
  - The “Sanity” check
  - Must represent unbiased, unemotional view
  - Often generated via statistical methods
  - Should include all known impacts on demand such as:
    - New product plans
    - Promotional/pricing plans
    - Competitive landscape

- **S&OP Meetings**
  - Marketing
  - Finance
  - Logistics/Operations
  - Review/Consensus Meeting

- **Supply**
  - Rough Cut Supply Plans
  - Supply Constraints
  - Unconstrained Demand Forecast
  - Constrained Demand Forecast
  - Supply Plans
Elements of S&OP meetings

- Typical number of meetings
  - One: To match supply and demand
  - Three: Demand review, then Supply Review, then final executive-level review and adjustments (e.g., Executive S&OP)

- Frequency and length
  - Monthly and/or weekly
  - 2 hours to half of a day

- Cross-functional
  - Demand forecasting organization
  - Supply chain
  - Operations (e.g., manufacturing, logistics)
  - Marketing
  - Sales
  - Finance

Agenda Items from A CPG Company’s S&OP Process

Learn from History:
Spend a short time looking back:
- How good was our last plan?
- What did we get right & why?
- What did we get wrong & why?
- Are there any trends emerging?
- What do we need to change for the future?

Focus on the Future:
Spend most of the time looking forward:
- Does the plan look & feel right?
- How does it compare with historical trends?
- Do we have a statistical right to believe the forecast?
- Have we got clearly documented assumptions?
- Have we really fixed past issues or are we repeating them?
Supply-Demand matching focuses on Historical Accuracy and Future Plans for Sales, Production, and Inventory

Agenda

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S&OP Success Factors

1. Ongoing routine S&OP meetings
2. Structured meeting agendas
3. Pre-work to support meeting inputs
4. An unbiased baseline forecast to start the process
5. Cross-functional participation
6. Participants empowered to make decisions
7. An unbiased, responsible organization to run a disciplined process
8. Internal collaborative process leading to accountability/consensus*

*A planning hierarchy is important to a collaborative process


Planning Hierarchies

Single number plans need to be translated into terms stakeholders can understand (such as revenue, costs, margins, and assets)

S&OP meetings should not discuss demand at the lowest detailed, SKU-level nor discuss at the top aggregated level – somewhere mid-aggregated demand (e.g., in apparel & footwear: color/style)
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Current S&OP Processes Are Challenged in Five Ways

1. Operations and APICS-oriented, and often not Marketing & Sales friendly
2. Don’t leverage organizational capabilities well
3. Internally-focused
5. Don’t account for uncertainties and risks
1. What Needs the Most Improvement?

**Frequent Imbalance in Functional Participation/Accountability**

s&OP or S&OP instead of S&OP

1. S&OP Does This by Enabling Joint Demand and Supply Planning (e.g., “demand-shaping with supply in mind”)
2. Organizational Capabilities: Many S&OP processes turn into Arm-Wrestle conflicts

Source: DS.com S&OP Knowledge Center, DemandSolutions, 2008

2. Organizational Capabilities: Types of Manager Mindsets*

- Facts
- Numbers
- Analyses
- Futuristic
- Possibilities
- Creative
- Decisive
- Judgmental
- Impatient

Sources: *Based on concepts discussed by Dr. Shalom Saar (MIT-CTL) at Demand Management Symposium held at MIT in 2006
2. Major Mindsets of S&OP Participants

- Doing what is right
- Doing what is new
- Doing what is true

Finance, Logistics and Operations

Marketing

Supply Chain

Sales

Lapide 2014
Page 23

2. Roles in the S&OP Process That Leverage Mindsets

- Sales: Identifying the sales possibilities, sales plans and market assumptions.
- Marketing: Identifying the demand plans, market assumptions, and possibly forecasting the demand.
- Operations & Logistics: Developing the supply plans and possibly forecasting the demand.
- Finance: Monetize the supply-demand financial plans.
- Supply Chain: Moderating a disciplined collaborative process and possibly forecasting the demand.
3. Internal Focus: Greater Use of Downstream and Upstream Collaborative Information is Needed

The “Bull Whip Effect” can be reduced and better understood using multiple upstream and downstream data in the S&OP process.

- **Inter-Company Collaboration**: In the S&OP process, suppliers, manufacturers, and distributors work together to align sales and operations planning across the supply chain.

- **Collaborative Information**: This includes:
  - **Upstream Supply Availability Information**
    - On-hand inventories
    - Availability forecasts
  - **Downstream Demand Signals**
    - POS, consumption, and warehouse withdrawals
    - On-hand inventories
    - Demand and replenishment forecasts (e.g., VMI, CPFR)

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- **Rudimentary S&OP**
  - Marketing joins to incorporate promotion and new product plans
  - Mid-1980’s

- **Today’s Classic S&OP**
  - Logistics & Supply Chain brought in to foster integrated view
  - Finance joins to align ops plans, budgets, and Wall Street expectations
  - 2009

- **Worldwide IBP Process**
  - Purchasing joins to incorporate materials shortages and rising commodity costs
  - Product Development joins to focus more on new product timelines
  - Future
4. Complex global businesses require multiple S&OP processes via parsing

  - Research question: How do you break up S&OP for global businesses?
- Findings:
  - Break up the S&OP process into closest entities that represent Profit & Loss (P&L) centers
  - Use the supply-side to best determine the P&L structure: 4 supply scenarios
  - Have Finance consolidate and harmonize the operational pieces
    - It becomes more important to translate operational plans into financial plans

Larry Lapide, “Parsing Holds the Key to Better S&OP”, Supply Chain Management Review, Mar/Apr 2012

5. Current S&OP processes Don’t Account for Uncertainties: Risk Management is needed

- Most S&OP processes use point forecasts and plans, assuming certainty
- Need to incorporate risk management techniques and methods to account for uncertain supply as well as demand:
  - Francis Bacon: “If a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties”.
    - Research Question: What risk management techniques can be brought into S&OP?
- Findings:
  - Use of range and scenario forecasts (to represent uncertainty)
  - Use tactics and techniques such as buffering (inventory, capacity, and time) and redundant sourcing strategies
  - Focus on important, strategic Products, Customers, and Suppliers using segmentation
  - Flexible supply (procurement) contracts

Variability in Sales

Coefficient of Variation = Standard Deviation of Period Sales or Forecast Error/Average Period Sales

Source: Alan L. Milliken, Use of Volume-Variance Analysis to Develop Demand Planning Strategies

Account for uncertainties: HP’s flexible procurement contracts using range forecasting

Demand Risk Influence on Procurement Contracts

Source: HP
Thank You

Questions
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