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

Companies Have Been Revising or Implementing S&OP for their First Time because:

• 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
S&OP Keeps the Critical Bridge Between Demand and Supply-Side Management Open

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

DM Processes

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

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

Aligning supply and demand plans helps ensure product availability with minimal waste and inefficiency
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Semi-Conductor Company’s S&OP

- 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
Consumer Telecommunications Equipment Manufacturer's S&OP

- Weekly Sales Review Meeting
  - Attended by Sales Planning and Forecasting
  - Output: Constrained view of demand (e.g., shipment forecast)
- Monthly Sales and Operations Meeting
  - Attended by Forecasting and Operations
  - Output: None at this meeting
- Monthly Executive Council Meeting
  - Attended by CFO, CMO, COO, and President
  - Output: Resolution of revenue and supply gaps and risks

- Process driven by Director of Forecasting
- Plans by month for 12 months
- Improvements:
  - More feedback from Operations

Computer System Manufacturer's S&OP

- Monthly Sales Forecast Rollup
  - Attended by Finance and Sales Integration Team
  - Output: In-quarter product family-level unconstrained demand plan
- Weekly Supply-Demand Call
  - Attended by Sales Finance and Supply Planning
  - Additional input: Six-quarters product family-level demand plan from Marketing
  - Output: Weekly constrained supply plan at components level
- Monthly Executive Council Meeting
  - Run by CFO and attended by CEO's operational staff
  - Output: High-level constrained supply-demand plans

- Process driven by Senior Director, Supply Planning and Mgmt
- Plans by week for one year
- Improvements:
  - More input and accountability from Marketing
  - Get information to suppliers quicker
  - More focus on "extended" lead-time products

Larry Lapide 2011
An S&OP Process Is Typically Driven by a Baseline Forecast Predicted on a Pre-Defined Demand Plan

- Baseline Demand Forecast
  - Must be estimate of true "unconstrained" demand
  - 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
- Logistics
- Sales
- Operations

Supply
- Finance
- Rough Cut Supply Plans
- Supply Constraints

Review/Consensus Meeting

Unconstrained Demand Forecast
- Constrained Demand Forecast
- Supply Plans

Elements of S&OP meetings

- 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
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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

Manufacturer “One Number” Functional Accountability

One Number Plan

- Accountability/Commitment
  - General Manager/CEO/CFO
- Divisional GMs/Presidents
- Marketing/Sales
- Operations/Logistics
- Production Lines/Warehouses/SKUs
- Product Lines/Channels/Sales Territories
- Divisions/Regions
- Company

Retailer “One Number” Accountability

One Number Plan

- Accountability/Commitment
  - General Manager/CEO/CFO
- Divisional GMs/Presidents
- Merchandisers/Buyers
- Store Operations
- Departments/Stores
- Items/Category
- Chain/Channels
- Company
Planning Hierarchies

Single number plans need to be translated into terms stakeholders can understand

**Demand-side Views**
- Sales View ($)
- Marketing View (Units)

**Supply-side Views**
- Logistics View (Units, Cases)
- Manufacturing View (Units)

**Financial Views**
- Operating Units (Revenue & Margins)
- Weeks
- Fiscal Year (Revenue & Margins)

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Current S&OP Processes Are Challenged in Seven Ways

1. Operations and APICS-oriented, and often not Marketing & Sales friendly
2. Don’t leverage organizational capabilities well
3. Internally-focused
4. Not globally-focused
5. Blind to uncertainties and risks
6. Lack adequate process measurement
7. Technology-challenged

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

- Unconstrained baseline demand forecast
- Rough-cut Marketing & Sales plans

**S&OP Meeting(s)**

- Product introductions
- Promotions
- Pricing actions
- Sales programs

**Demand Planning**

- Constrained demand forecast
- Supply plans
- Financial plans

**Supply Planning**

- Purchasing
- Manufacturing
- Inventory
- Transportation
- Warehousing

- Rough-cut supply plans
- Manufacturing constraints
- Other supply limitations

“Need a process that is able to chase demand or supply quickly”

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
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. What Also Needs Improvement?

Internal “Four Walls” Concept With Little External Collaboration

- **S&OP Process Meeting(s)**
  - Marketing
  - Logistics
  - Sales
  - Operations
- **Review/Consensus Meetings**
- **Customer Information**
- **Supplier Information**
3. 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.

- **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)


  - Research question: How do you break up S&OP for complex and global businesses?

- Findings:
  - Break up the S&OP process into closest entities that represent Profit & Loss (P&L) centers
  - Using the supply-side to best determine the P&L structure
  - Have Finance consolidate and harmonize the operational pieces
    - *It becomes more important to translate operational plans into financial plans*

5. Current S&OP processes Don’t Account for Uncertainties

- Most S&OP process 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)
  - Methods such as buffer strategies*, multiple sourcing, etc.
  - Customer and product segmentation (importance vs forecastability/order lead times)

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6. S&OP Needs More Process-Based Performance Metrics (e.g., KPIs)

- **Demand-side**
  - Forecast accuracy (compared to demand variation or naïve forecast)
  - Variance to baseline forecast
  - Demand versus budget and Sales and Marketing goals
  - Adherence to demand plan

- **Supply-side**
  - Adherence to manufacturing/operational plans

- **Supply-Demand**
  - Efficient Perfect Order (the ultimate measure of S&OP)*
    
    *See: Larry Lapide, “Not-So-Perfect Order”, Supply Chain Management Review, July/August 2007*

7. Lastly, An Integrated Supply-Demand Planning Technology Enabling Architecture is Needed

- S&OP Workbench
  - Dashboards
  - Scorecards
  - What-ifs

- Demand-Side Planning
  - Demand Planner
  - Demand Collaborator

- Supply-Side Planning
  - Inventory Mgmt/DRP
  - Multi-facility APS
  - Inventory Optimizer
  - Supply Collaborator

- ERP Systems
- MRP Systems
- MES Systems

- Legacy Systems
- Other Transactional Systems

Questions?