S&OP Implementation

do it right

Amy Mansfield, V & M Star

International Symposium on Forecasting, June 26, 2012
Vallourec is a world leader in premium tubular solutions primarily serving the energy markets, as well as other industrial applications. With 22,200 employees, integrated manufacturing facilities, advanced R&D, and a presence in more than 20 countries, Vallourec offers its customers innovative global solutions to meet the growing energy challenges of the 21st century.

Processes:
- Melt Shop
- Rolling
- Heat Treat
- Inspection
- Hydrotester
- Threading
Executive S&OP Journey

2006
- V&MSTAR Implementation

2010
- Purchase of V&M TCA plant
- Inclusion in S&OP process

2011
- Addition of VAM Threading
- Implementation of combined NA meetings
Implementation

do it right

SUCCESS REQUIRES

• Defined set of practices (What, How, & Who)
• High discipline to those practices
• Accurate, timely, & believed data
• Valid, simplifying assumptions
• Constant improvement
• Changed performance measures
• Culture/Behavior change
Implementation

*do it right*

- Utilize a Champion
- Change Management
- Accurate Data
- Formal Implementation Plan
Utilize a Champion

- Companies (68 percent) with past S&OP efforts that did not deliver the anticipated results identify lack of commitment from top management as the main challenge to successful implementation of S&OP.
Utilize A Champion

Cham -pi –on  (noun)
Warrior, Fighter
One that does battle for another’s rights or honor

Webster’s On-Line Dictionary
Utilize a Champion

- Top Management level
- Keep executive attention focused on the initiative
- Assist in acquiring needed resources
  - People
  - Data
- Provide support to the Design Team
- Minimal time commitment
Change Management

**Good News**
- Few People
- Early Results
- Low Risk, Low Cost, High Impact

**Bad News**
- Change
  - Cultural Change for organization
  - Behavioral Change for individuals
Change Management

• S&OP’s **IMPACT** on your business

• Is a **CONSEQUENCE** of the Executive Team’s

• **COMMITMENT** to the **PROCESS**
Change Management Implementation J Curve

- Uninformed Optimism
- Informed Pessimism
- Frustration And Fear
- Informed Optimism (ownership)
- Hopeful Realism

Enthusiasm vs. Time
# Change Management Issues

<table>
<thead>
<tr>
<th>Title</th>
<th>Current</th>
<th>Impact</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive buy-in</td>
<td>Overall consensus is that executive management is not enthusiastic about this project</td>
<td>Project team member will not put full effort into this project if they feel it is not &quot;enthusiastically supported&quot; by executive management</td>
<td>When the team presents the final implementation plan to executive management they need to leave that meeting with a clear indication of the importance of the project</td>
</tr>
<tr>
<td>Under promise, overachieve</td>
<td>Overall consensus is that setting realistic goals and then meeting those goals at +/- some preset goal is not part of the current culture of V&amp;M STAR. The belief is that under promising and then always overachieving is what is expected. While this can continue with information sent to corporate,</td>
<td>S&amp;OP will not work if forecasts (both sales and production) are not reasonable and realistic.</td>
<td>As the process moves forward, actualize will be compared to forecast. If a bias (either positive or negative) is shown, the owner of the forecast needs to be directed that accurate forecasts are needed. The believability of this request needs to be shown by executive management.</td>
</tr>
<tr>
<td>Data Integrity</td>
<td>There is a belief that people will be held &quot;to the fire&quot; for the integrity of their forecasts</td>
<td>An unwillingness to give the best forecast based on the best data and instead to try to guess what executive management wants to hear and to forecast that figure</td>
<td>People need to understand that they will be held responsible for knowing why a forecast is not met, not for hitting the forecast. The culture needs changed so people do not feel that they will be blamed for bringing legitimate reasons to a meeting for why a forecast was not met. That is the nature of all forecasts, they are wrong 5 minutes after they are set. What is important is understanding what changed and whether a forecast is continually biased one way or another. If the net change is even, then the forecasts are being done correctly.</td>
</tr>
</tbody>
</table>
Implementation: The Real Issue

Understanding S&OP is simple. The hard part is . . .
Organizational Behavior Change
changing the way we do our jobs.
Accurate Data

• Executive S&OP is a business process based on evaluating data
Accurate Data

• Issues:
  o Ownership of Data
  o Demonstrated versus Dream
  o Data Systems
  o Timeliness
3 Steps

1. Data gathering
2. Spreadsheet update
3. Figures check and Analysis

Pre-S&OP
## S&OP Checklist For Data

<table>
<thead>
<tr>
<th>WHAT</th>
<th>WHO</th>
<th>TYPE</th>
<th>HERE</th>
<th>DONE?</th>
</tr>
</thead>
<tbody>
<tr>
<td>200X production data YTD Month .XLS</td>
<td>Robert / Controlling</td>
<td>To be stored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200X Inspection data Month. XLS</td>
<td>Robert / Controlling</td>
<td>To be stored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delays 2010 . XLS</td>
<td>Reagan</td>
<td>To be stored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 3 months ahead Trial and Schedule downtime for CHT</td>
<td>Reagan</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS UT &amp; EMI (overall)</td>
<td>Monthly letter</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pieces inspected UT&amp;EMI (overall)</td>
<td>Monthly letter</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 3 months ahead schedule downtime</td>
<td>Dewey / Inspection Manager</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minutes OX . XLS</td>
<td>Hercules extract tool</td>
<td>To be stored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 3 months ahead schedule downtime for Hydro &amp;Threading (PMC)</td>
<td>Rusty / Threading and Hydrotester Manager</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extract from Factory planner for 2-3 months ahead (mix in tons for CHT, Mix in hours for PMC, Volume in tons for CHT, pieces for PMC)</td>
<td>Dorothy / Scheduling</td>
<td>To be stored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand forecast table . XLS</td>
<td>Karen / Sales</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mix forecast in tons per defined group (A, B, C, D)</td>
<td>Karen / Sales</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extract from Pipe System of new product specification</td>
<td>Dorothy / Scheduling</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHT cycle time for new product</td>
<td>Reagan</td>
<td>Direct Input</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Demonstrated & Analysis

<table>
<thead>
<tr>
<th>ACTUAL TRS</th>
<th>Casing &lt;7 (MT/Pieces)</th>
<th>Casing &gt;7 &lt;10 (MT/Pieces)</th>
<th>Casing &gt;10 (MT/Pieces)</th>
<th>Coupling Total (MT/Pieces)</th>
<th>Total (AC)</th>
<th>TOTAL (AC &amp; CS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-05</td>
<td>0.405</td>
<td>0.936</td>
<td>1.243</td>
<td>0.845</td>
<td>0.608</td>
<td>0.622</td>
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<tr>
<td>Feb-05</td>
<td>0.418</td>
<td>0.947</td>
<td>0.945</td>
<td>0.667</td>
<td>0.663</td>
<td>0.663</td>
</tr>
<tr>
<td>Mar-05</td>
<td>0.380</td>
<td>0.872</td>
<td>1.046</td>
<td>1.176</td>
<td>0.777</td>
<td>0.790</td>
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<tr>
<td>Apr-05</td>
<td>0.431</td>
<td>0.779</td>
<td>1.251</td>
<td>0.986</td>
<td>0.651</td>
<td>0.678</td>
</tr>
<tr>
<td>May-05</td>
<td>0.413</td>
<td>0.954</td>
<td>1.014</td>
<td>0.680</td>
<td>0.642</td>
<td>0.645</td>
</tr>
<tr>
<td>Jun-05</td>
<td>0.434</td>
<td>0.979</td>
<td>0.929</td>
<td>1.048</td>
<td>0.760</td>
<td>0.770</td>
</tr>
<tr>
<td>Jul-05</td>
<td>0.427</td>
<td>0.848</td>
<td>0.921</td>
<td>0.785</td>
<td>0.698</td>
<td>0.706</td>
</tr>
<tr>
<td>Aug-05</td>
<td>0.446</td>
<td>0.893</td>
<td>1.219</td>
<td>0.761</td>
<td>0.744</td>
<td>0.745</td>
</tr>
<tr>
<td>Sep-05</td>
<td>0.419</td>
<td>0.775</td>
<td>0.927</td>
<td>0.607</td>
<td>0.667</td>
<td>0.663</td>
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<tr>
<td>Oct-05</td>
<td>0.458</td>
<td>1.035</td>
<td>1.118</td>
<td>1.157</td>
<td>0.748</td>
<td>0.759</td>
</tr>
<tr>
<td>Nov-05</td>
<td>0.431</td>
<td>0.862</td>
<td>0.952</td>
<td>1.087</td>
<td>0.703</td>
<td>0.722</td>
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<tr>
<td>Dec-05</td>
<td>0.482</td>
<td>0.863</td>
<td>1.086</td>
<td>0.504</td>
<td>0.802</td>
<td>0.775</td>
</tr>
</tbody>
</table>

### Mix in tons (4 months sliding average)

<table>
<thead>
<tr>
<th>Casing Group A</th>
<th>Casing Group B</th>
<th>Casing Group C</th>
<th>Casing Group D</th>
<th>Casing total</th>
<th>Coupling stock / total</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.0%</td>
<td>33.0%</td>
<td>32.7%</td>
<td>7.3%</td>
<td>91.9%</td>
<td>8.1%</td>
</tr>
<tr>
<td>26.9%</td>
<td>22.7%</td>
<td>46.6%</td>
<td>3.8%</td>
<td>90.8%</td>
<td>9.2%</td>
</tr>
<tr>
<td>19.7%</td>
<td>19.3%</td>
<td>57.1%</td>
<td>3.9%</td>
<td>92.3%</td>
<td>7.7%</td>
</tr>
<tr>
<td>17.0%</td>
<td>24.7%</td>
<td>54.6%</td>
<td>3.8%</td>
<td>91.2%</td>
<td>8.8%</td>
</tr>
<tr>
<td>15.3%</td>
<td>25.1%</td>
<td>56.7%</td>
<td>2.8%</td>
<td>91.0%</td>
<td>9.0%</td>
</tr>
<tr>
<td>11.0%</td>
<td>27.4%</td>
<td>58.7%</td>
<td>2.8%</td>
<td>92.4%</td>
<td>7.6%</td>
</tr>
<tr>
<td>13.4%</td>
<td>28.8%</td>
<td>54.5%</td>
<td>3.3%</td>
<td>91.2%</td>
<td>8.8%</td>
</tr>
<tr>
<td>12.5%</td>
<td>25.4%</td>
<td>58.8%</td>
<td>3.3%</td>
<td>91.9%</td>
<td>8.1%</td>
</tr>
<tr>
<td>8.7%</td>
<td>25.0%</td>
<td>63.9%</td>
<td>2.4%</td>
<td>92.6%</td>
<td>7.4%</td>
</tr>
</tbody>
</table>
S & OP Process

TIME FENCE

Month

Today  The Future

1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18

Staffing Decisions?

Capex Decisions?

Demonstrated Capacities

Factory Planner
APS System

Sales & Operations Planning
Formal Implementation

Pitfalls

- Middle Mgt. only
- It’s a Supply Chain ‘thing’
- No Education
- No consensus on ‘end game’
- No discipline
- Inadequate Pre-S&OP
- Conflict Aversion

- S&OP Meetings:
  - Show & Tell
  - Unfocused
  - Short Term
  - Too Much Detail (MPS)
  - Meeting Too Long
  - Finger Pointing

- Ongoing Data Problems

- Lack of Progress
Formal Implementation

• Executive Briefing
  o Understanding of S&OP capabilities
  o Make the business case
  o Discuss implementation case
    • Time-frame
    • Resources
  o Go-No Go Decision
## V&M STAR
### Project Charter

**Project Team Name:** Sales & Operations Planning Team

<table>
<thead>
<tr>
<th>Business Case</th>
<th>Opportunity Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales &amp; Operations Planning is a business process that helps companies keep demand and supply in balance.</td>
<td>Some of the functions of S &amp; OP are currently done informally at V&amp;M. This team will help to formalize the process. This will improve decision-making regarding customer service goals, sales volumes, production rates, level of inventories and customer order backlog.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal Statement</th>
<th>Project Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>The intent of the team is to 1) Receive training on the concepts of Sales &amp; Operations Planning; 2) determine how to apply the principles of S &amp; OP at V&amp;M; 3) develop a detailed implementation plan; and 4) implement the process.</td>
<td>The project will begin with S &amp; OP training and will continue through the implementation phase. Implementation will be considered complete when all product families have been included in the process, a S &amp; OP policy has been written and the process is running smoothly on its own.</td>
</tr>
</tbody>
</table>

### Project Plan

<table>
<thead>
<tr>
<th>Team Selection</th>
<th>Deliverables</th>
<th>Time and Cost Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Implementation of S &amp; OP</td>
<td>To be determined</td>
</tr>
<tr>
<td>Amy Mansfield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jimmy Langford</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karen Leone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joe Kichefski</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rusty Couch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ken Johnson</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bob Miller</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dewey Allen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eric Shuster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eike Weimer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mike Wheatley</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adam Szczepanski</td>
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<td></td>
</tr>
</tbody>
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**Continuous Improvement Team**

- Legitimize process
- Executive buy-in
Design Team

• Design Team Leader
  o Maintains project schedule
  o Communicates issues to Executive Champion
  o 50% time commitment
  o Good people skills
  o Proactive and well organized
  o Effective meeting facilitator
  o Business knowledge

• Spreadsheet Developer
  o ‘Excel’ wizard

• Design Team Member
  o Department experts
  o 20% time commitment
  o Change Agents
Project Schedule

- Kickoff Education
- Development of Project Schedule
- Identification of Product Families
- Data Requirements
- Demand Planning
- Supply Planning
- Preparation for Live Pilot
Formal Implementation

90 Days

Phase I
Preparation

Phase II
Expansion & Replication

Phase III
$ Integration

Business Improvement

1 2 3 4 5 6

Months
Issues to Plan

- Product Families
- Report Format
  - Demand - Family / Sub Family
  - Supply
  - Valid Assumptions
  - Performance Measures
- Data Sources & Design
- Data Closing
- Demand Planning
  - Data & Process
- Supply Planning
  - Rough Cut Resource Mechanics
- Meeting/Process Dates & Times
- Performance Measures
- Complete Implementation Plan
- Set pilot demo & review dates
Implementation Principles

• Implementation begins and ends with the Leader of the business

• “Hold the high ground” – involve top management at the very outset of the implementation, and throughout – and . . . . . . success will almost always follow
What are the Benefits?

**Hard Benefits:**

- Higher Customer Service
- Lower Finished Goods Inventories
- Smaller Customer Order Backlogs
- More Stable Supply Rates
- Less Unplanned Overtime
- Higher Productivity
What are the Benefits?

**Soft Benefits:**
- Better Decisions in Less Time
- Enhanced Teamwork - Operating Level Mgt.
- Enhanced Teamwork - Executive Mgt.

- Monthly Update to the Business Plan
- Greater Accountability
- Greater Control
S & OP Process

A continuous process

Step #1
Data Gathering

Step #2
Sales Analysis

Step #3
Capacity Agreement

Step #4
Pre S&OP Meeting

Step #5
Executive Meeting
Implementation Success

NOT THE FINISH . . . . . . . . . . THE BEGINNING