

# APICS Introduction to Sales and Operations Planning (S&OP)

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## Supply & Demand



# Introductions – Presenter

**Introduce  
yourself!**

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25 plus years in SCM

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Certifications

CPIM, CIRM, CSCP, CDDP, PMP

# Presentation Agenda

- S&OP Definition
- S&OP process overview
- What, where, how ,when and why
- Attributes and objectives of S&OP
- S&OP implementation challenges
- Foundation components for successful S&OP
- Benefits of S&OP
- Resources

# Sales and Operations Planning (S&OP)

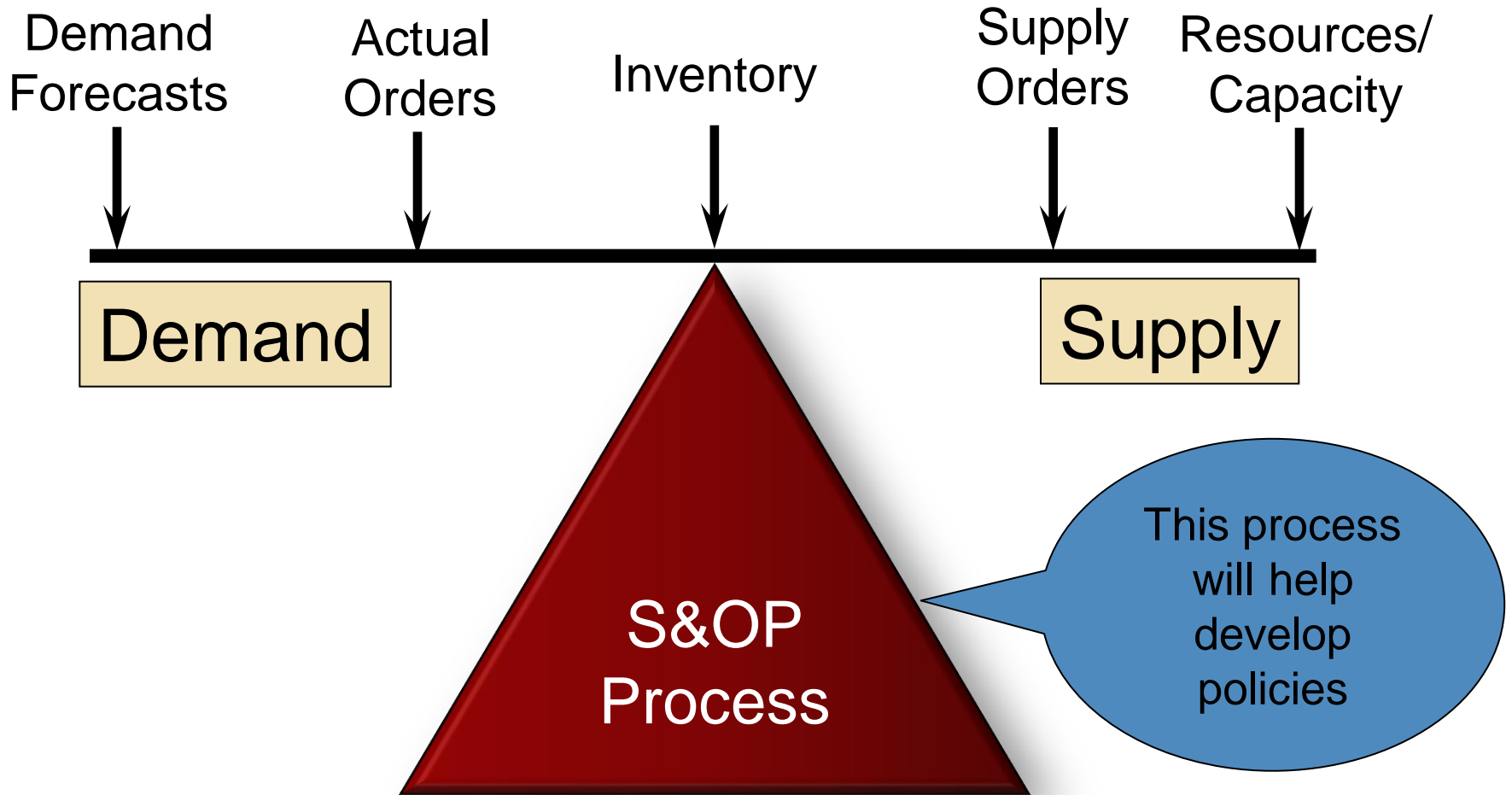


## Definition

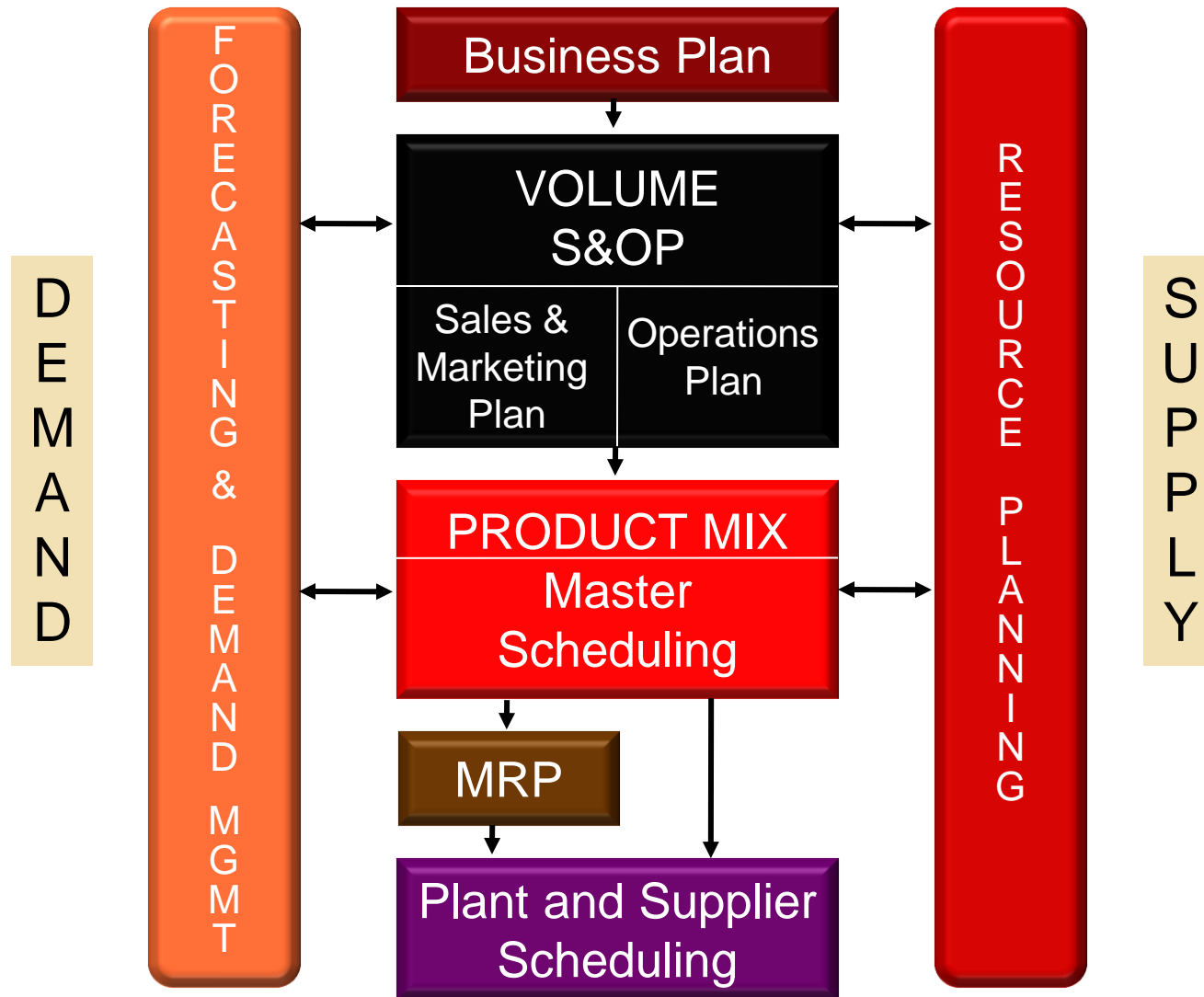
A process to develop tactical plans that provide management the ability to strategically direct its businesses to achieve competitive advantage on a continuous basis by integrating customer-focused marketing plans for new and existing products with the management of the supply chain. The process brings together all the plans for the business (sales, marketing, development, manufacturing, sourcing, and financial) into one integrated set of plans.

*APICS Dictionary, 14th edition*

# S&OP – A Balancing Act

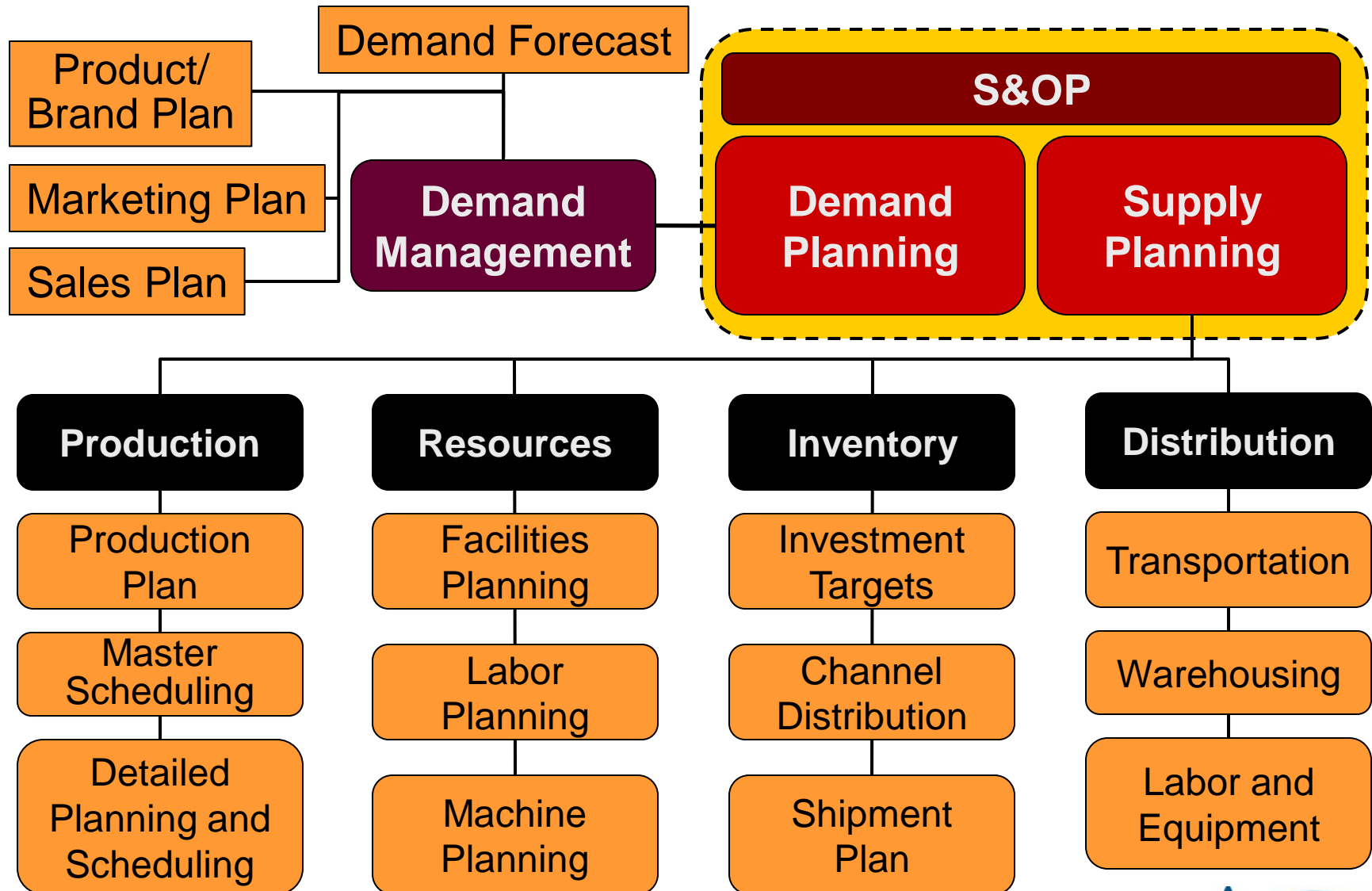


# Demand and Supply and Volume and Mix









Adapted from Wallace, *Sales & Operations Planning*, 3rd ed., p. 207

# S&OP Processes



# Major Attributes of S&OP



-  Connects business planning to tactical planning
-  Balances supply and demand at the product family level
-  Plans at the volume level using aggregate time buckets, not the individual end-product mix level
-  Enables in a better understanding of the customer and market opportunities and company capabilities
-  Involves sales, marketing, manufacturing, logistics, finance, and other departments
-  Is a demand- and strategy-driven process



# Objectives of S&OP



1. Supports and measures the business plan
2. Ensures that the strategic plans are realistic before being passed to tactical planning
3. Enables the organization to effectively manage changes to plans
4. Provides for the effective management of finished goods inventories and order backlog to support customer service
5. Enables performance measurement to identify when actual performance has deviated from the plan
6. Enables the organization to be *focused, aligned, and engaged*.

# Why Plan?

What is one thing most companies have to do once a year?

## BUDGETING!!!

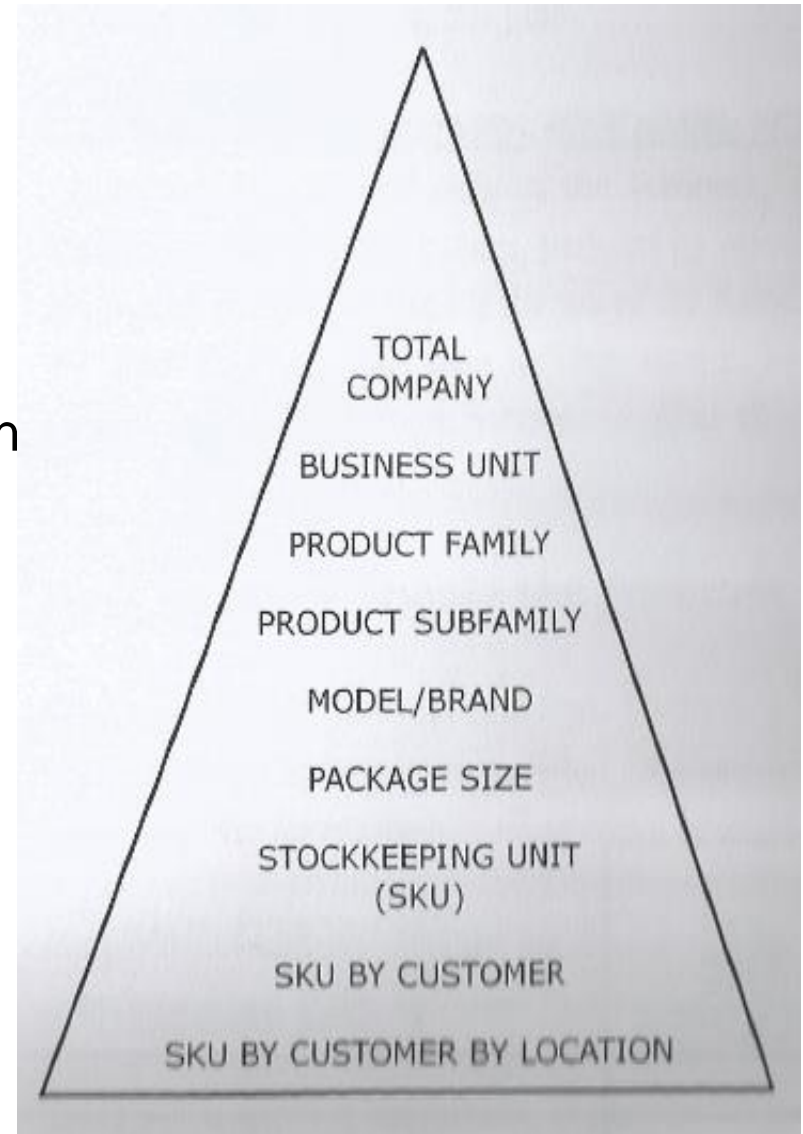
- To anticipate and prepare for the future
- To ensure adequate available resources
- Customer service
- To focus on being proactive
- To avoid problems

# What's the Alternative?

- ⊗ The only alternative to planning is NOT planning
  - ⊗ NOT planning means difficult to control
  - ⊗ NOT planning means difficult to manage
  - ⊗ Expediting is the opposite of planning
- ⊗ Companies that plan will win vs those who don't.

# How to set up

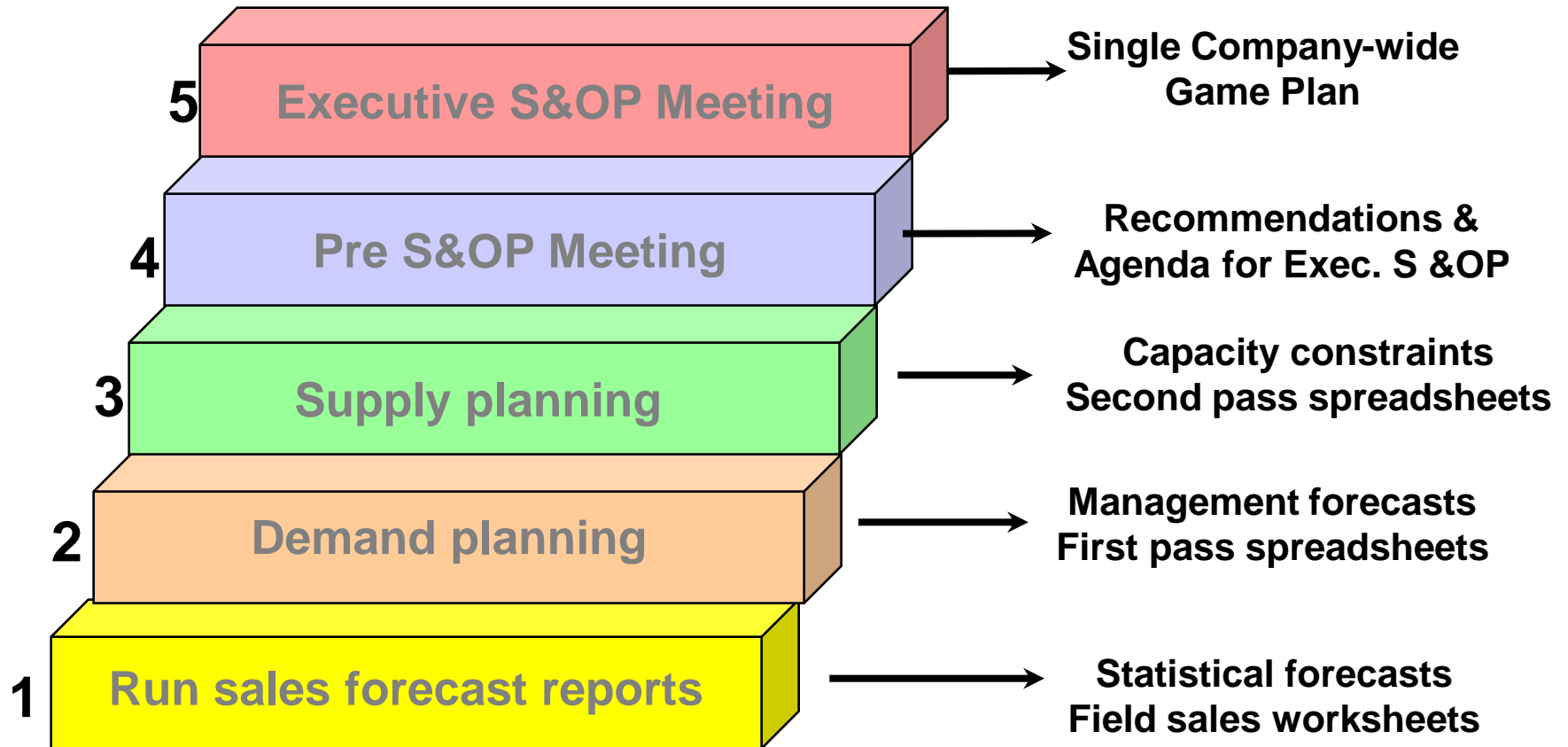
- Determine your families
  - Groups of sku's
  - Usually linked to budgeting
  - Assembly groupings
  - Marketing aligned or Supply Align
- Determine your Unit of Measure
  - \$
  - Tons
  - Cases
  - 1000's of Litres
  - Thousands of pallets
  - Trucks
  - KSM 1000's of sq meter



# How - S+OP format

|  |            |                    |       |      |      |      |        |
|--|------------|--------------------|-------|------|------|------|--------|
| example A                              |            |                    |       |      |      |      |        |
| ACME WOMANS FASHION SNEAKER LINE       |            | uom=pairs of shoes |       |      |      |      |        |
|  |            |                    |       |      |      |      |        |
|  | February   | March              | April | May  | June | July | August |
| <b>Planned Sales</b>                   |            | 1000               | 1000  | 1000 | 1200 | 1500 | 1500   |
| <b>Planned Inventory(starting 700)</b> | <b>700</b> | 900                | 1100  | 1300 | 1300 | 1000 | 700    |
| <b>Planned Production</b>              |            | 1200               | 1200  | 1200 | 1200 | 1200 | 1200   |

# The Monthly S & OP Process



# We got a new forecast- work out a plan!

|   |            |       |       |                     |             |             |             |
|---|------------|-------|-------|---------------------|-------------|-------------|-------------|
| example A                                   |            |       |       |                     |             |             |             |
| ACME WOMANS FASHION SNEAKER LINE            |            |       |       | uom= pairs of shoes |             |             |             |
|   |            |       |       |                     |             |             |             |
|   | February   | March | April | May                 | June        | July        | August      |
| <b>Planned Sales</b>                        |            | 1000  | 1000  | 1000                | 1200        | 1500        | 1500        |
| <b>Planned Inventory(starting 700)</b>      | <b>700</b> | 900   | 1100  | 1300                | 1300        | 1000        | 700         |
| <b>Planned Production</b>                   |            | 1200  | 1200  | 1200                | 1200        | 1200        | 1200        |
|   |            |       |       |                     |             |             |             |
| example B                                   |            |       |       |                     |             |             |             |
| ACME WOMANS FASHION SNEAKER LINE            |            |       |       | uom= pairs of shoes |             |             |             |
|   |            |       |       |                     |             |             |             |
|   | February   | March | April | May                 | June        | July        | August      |
| <b>Planned Sales</b>                        |            | 1000  | 1000  | 1500                | <b>1300</b> | <b>1700</b> | <b>1700</b> |
| <b>Planned Inventory(starting 700)</b>      | <b>700</b> |       |       |                     |             |             |             |
| <b>Planned Production</b>                   |            |       |       |                     |             |             |             |
| <b>Aggregation of all safety stocks=500</b> |            |       |       |                     |             |             |             |
| <b>Max monthly capacity =1300</b>           |            |       |       |                     |             |             |             |

# New Inventory Plan B

|                                      |          |       |       |      |      |      |        |
|--------------------------------------|----------|-------|-------|------|------|------|--------|
| example B                            |          |       |       |      |      |      |        |
| ACME WOMANS FASHION SNEAKER LINE     |          |       |       |      |      |      |        |
|                                      |          |       |       |      |      |      |        |
|                                      | February | March | April | May  | June | July | August |
| Planned Sales                        |          | 1000  | 1000  | 1500 | 1300 | 1700 | 1700   |
| Planned Inventory(starting 700)      | 700      | 1000  | 1300  | 1100 | 1100 | 700  | 300    |
| Planned Production                   |          | 1300  | 1300  | 1300 | 1300 | 1300 | 1300   |
| Aggregation of all safety stocks=500 |          |       |       |      |      |      |        |
| Max monthly capacity =1300           |          |       |       |      |      |      |        |

How does this affect  
Sales Thinking?

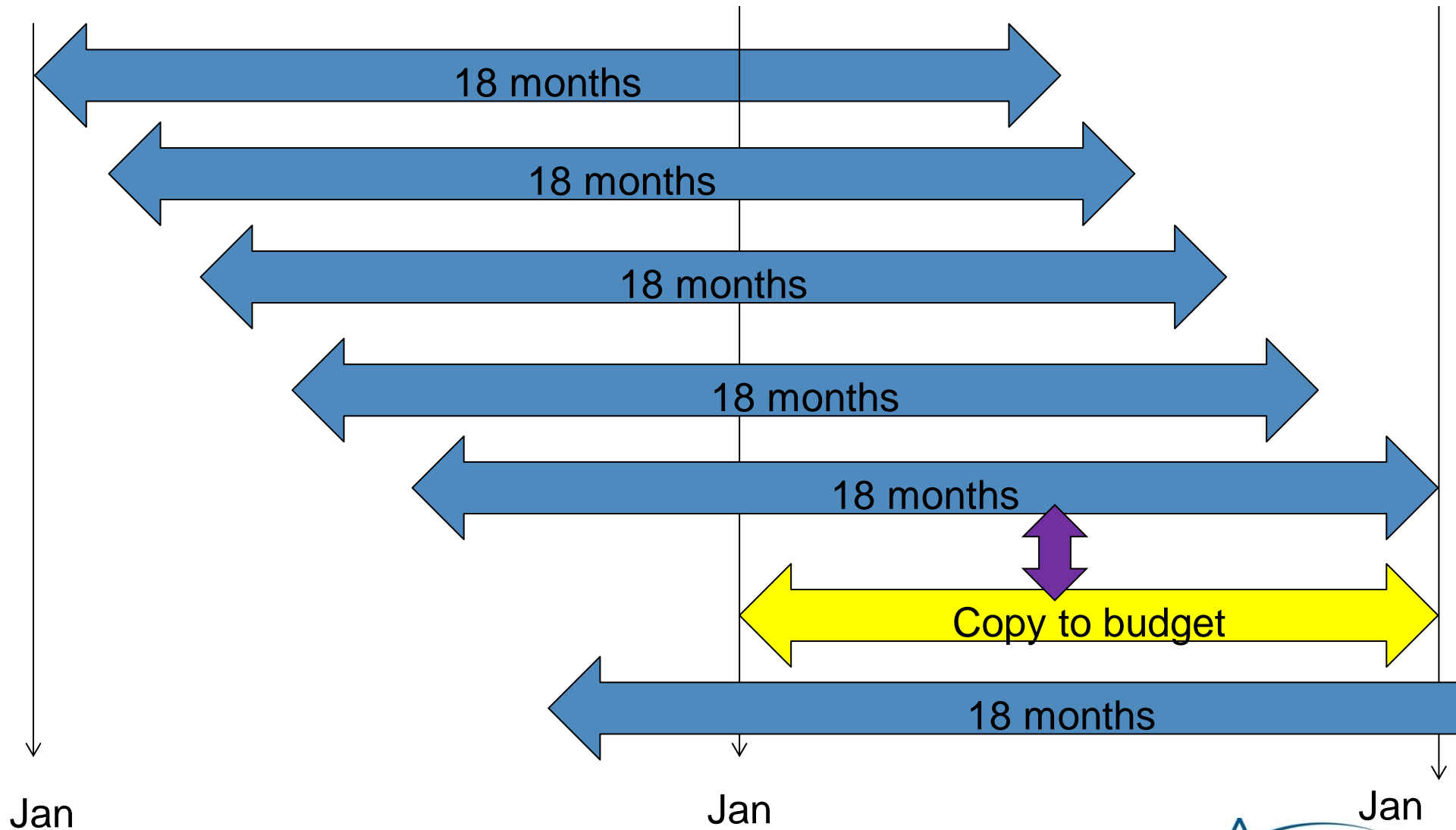
Able to get 100 more  
subcontracting July & Aug



# Example B-1

|   |            |       |                     |      |             |             |             |
|---|------------|-------|---------------------|------|-------------|-------------|-------------|
| example B-1                                 |            |       |                     |      |             |             |             |
| ACME WOMANS FASHION SNEAKER LINE            |            |       | uom= pairs of shoes |      |             |             |             |
|   |            |       |                     |      |             |             |             |
|   | February   | March | April               | May  | June        | July        | August      |
| <b>Planned Sales</b>                        |            | 1000  | 1000                | 1500 | <b>1300</b> | <b>1700</b> | <b>1700</b> |
| <b>Planned Inventory(starting 700)</b>      | <b>700</b> | 1000  | 1300                | 1100 | 1100        | 800         | 500         |
| <b>Planned Production</b>                   |            | 1300  | 1300                | 1300 | 1300        | 1400        | 1400        |
| <b>Aggregation of all safety stocks=500</b> |            |       |                     |      |             |             |             |
| <b>Max monthly capacity =1300</b>           |            |       |                     |      |             |             |             |

# When - Time Horizon



# S&OP Maturity Level

We have overcome challenges and are seeing significant results

46%

We have stalled or are proceeding very slowly

36%

We had a smooth implementation of S&OP and follow best practices

8%

We plan to start again, learning from challenges from our past efforts

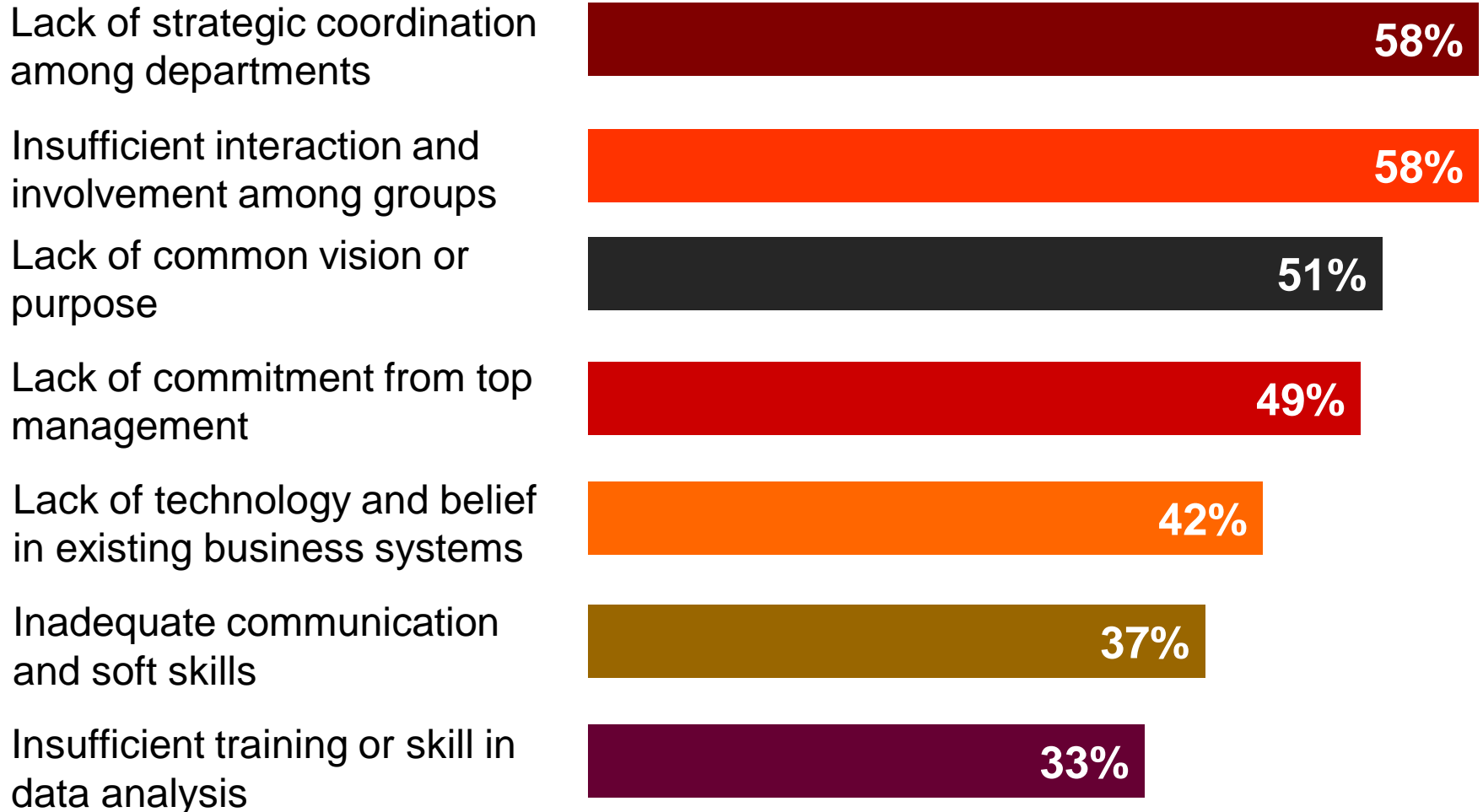
8%

We have no plans to implement S&OP at this time

2%

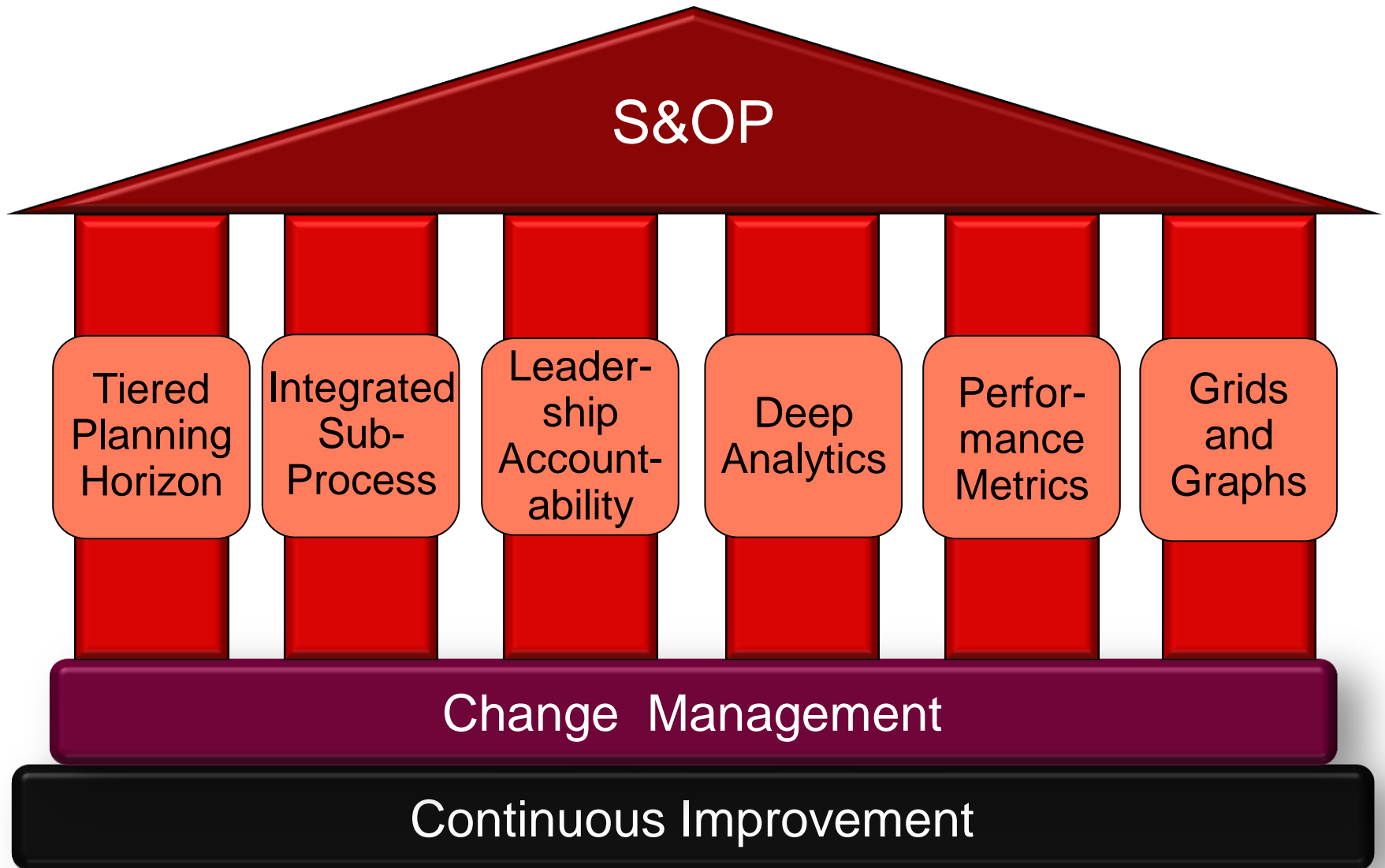
Source: APICS, “2011 Sales and Operations Planning Practices and Challenges”

# Common S&OP Implementation Challenges



Source: APICS, “2011 Sales and Operations Planning Practices and Challenges”

# Foundations of Successful S&OP



# #1 – Tiered Planning Horizon



## Strategic

Long-range plans, aggregate financial data

## Tactical

Medium-range plans, product family volume data

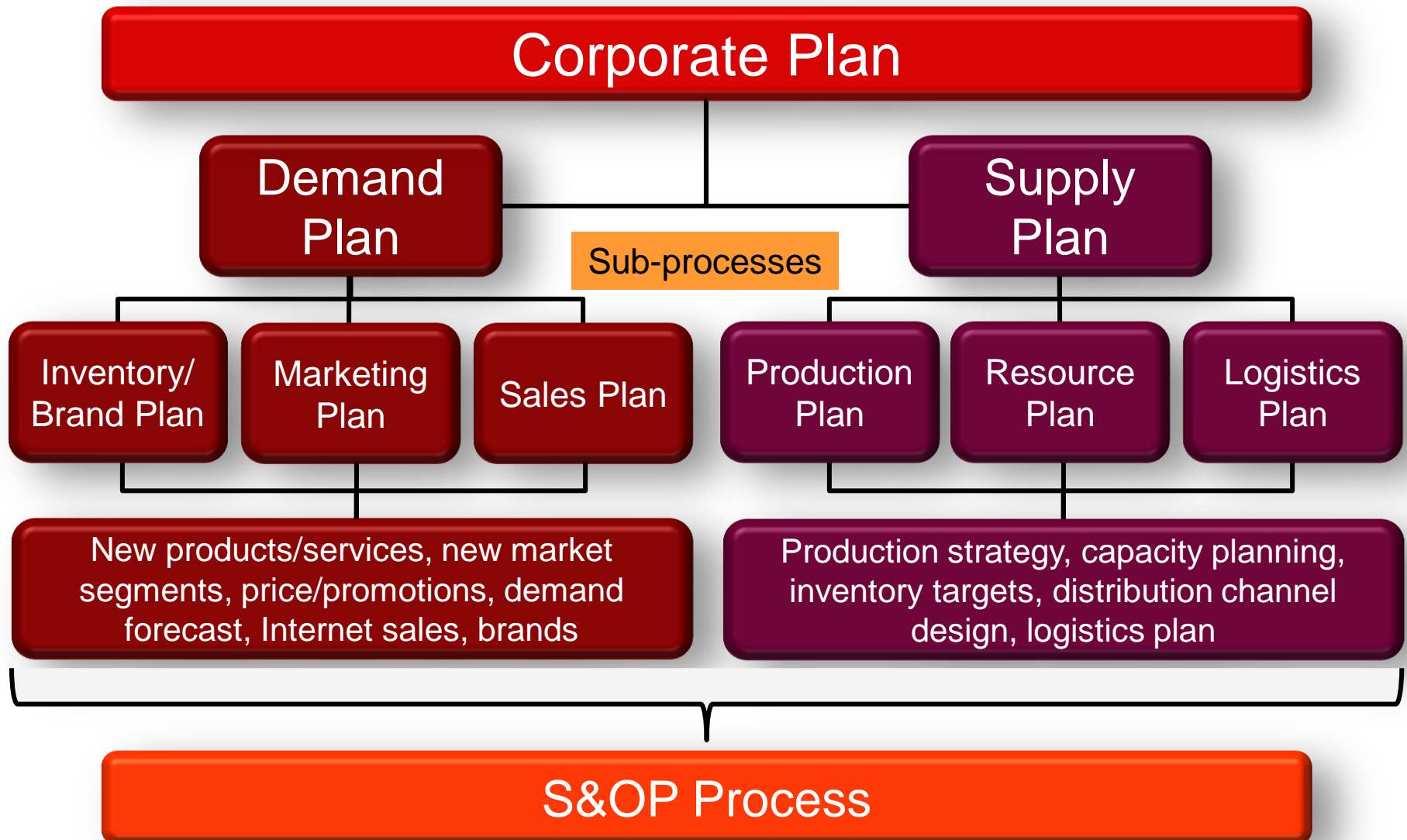
## Operational

Short-range plans, detail product mix data for day-to-day planning

### Key benefits:

- Linkage of strategic corporate goals to S&OP processes
- Build coordination and alignment of demand and supply management functions and corporate business objectives
- Provide ease of consensus building between corporate goals, demand objectives, and supply objectives
- Ability to step away from day-to-day management and see the big picture

## #2 – Integrated Sub-Processes



# #3 – Leadership Accountability



Executive  
S&OP team

Makes decisions on critical issues, authorizes spending for production, reviews financial plan to business performance

Executive

Sets top management expectations, authorizes

S&

Leadership accountability answers the question  
“Who are the owners of the S&OP process.”  
Without effective process governance S&OP  
process planning, control, execution, and  
improvement will fail.

Supply  
planning team

Sets production plan to meet demand, details production rates and capacities, validates resource availability

Pre-S&OP  
team

Makes decisions on demand and supply balance, resolves problems, identifies issues, develops alternatives, sends findings to executive S&OP







## #4 – Deep Analytics



The data and the application of analytics is at the heart of S&OP

Analytics-based reporting tells the S&OP planning teams:

-  Where they are
-  What actions need to be taken and driven down into tactical and operations S&OP processes
-  What results and trends are emerging from their decisions
-  What corrective steps do the S&OP planning teams which to take

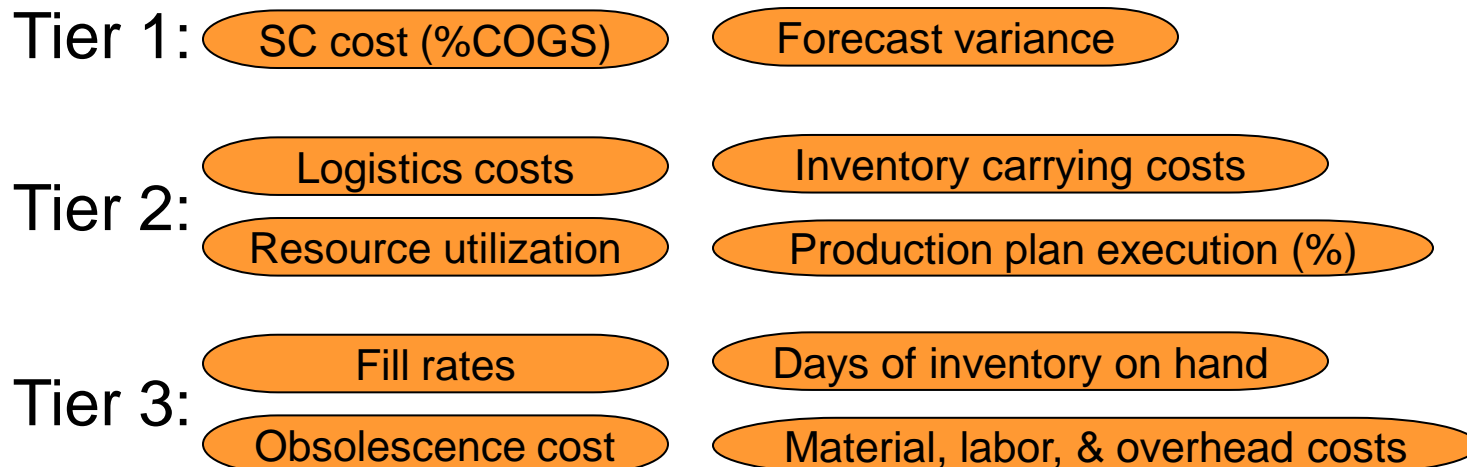
# #5 – Performance Metrics



Performance metrics drive accountability and ownership for S&OP objectives

Performance metrics make the S&OP process rigorous, disciplined, and factual so executives gain confidence in the integrity of the S&OP process

Tiered approach: supply chain performance example



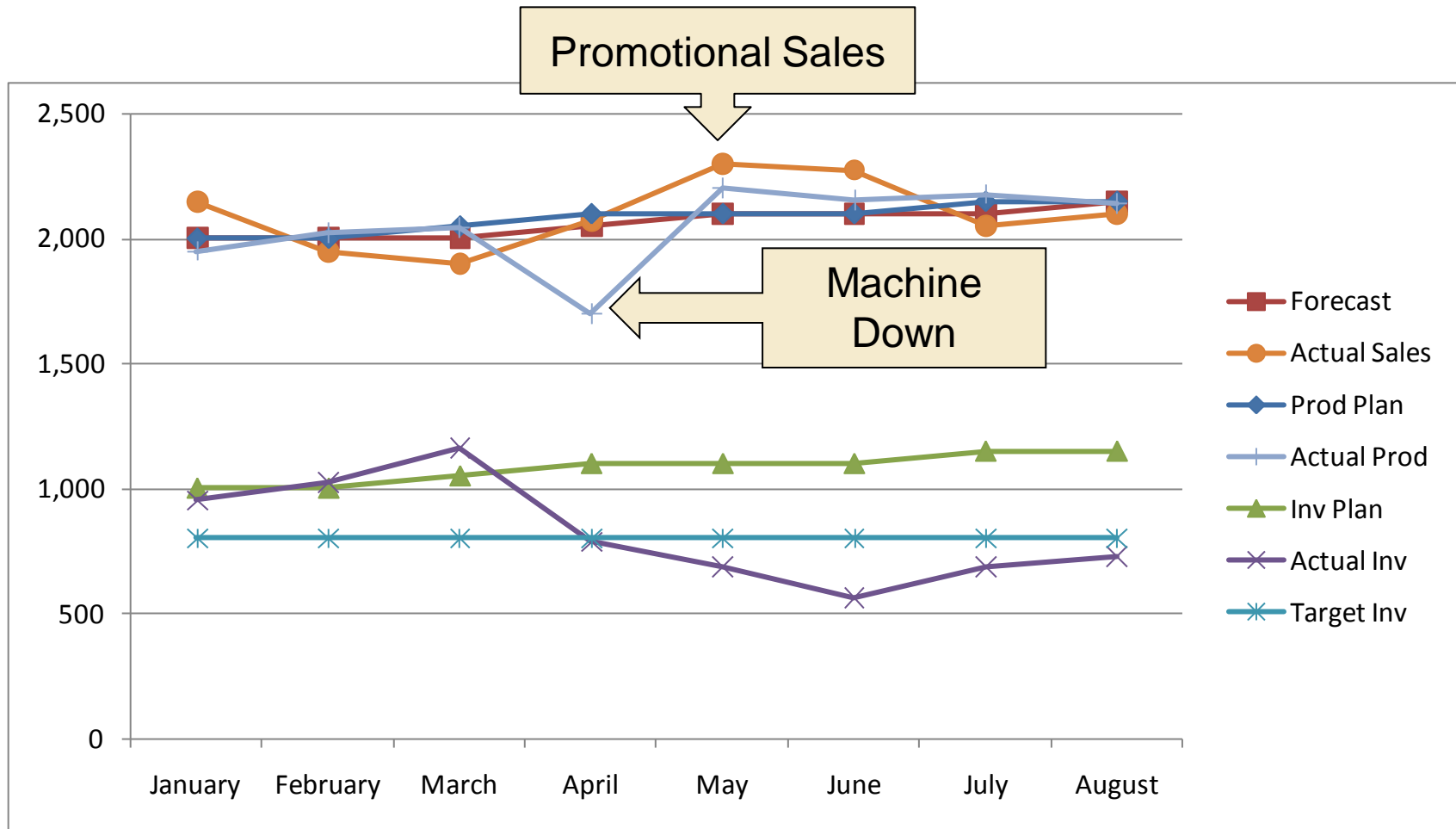
## #6 – Grids and Graphs

|           | Past Periods |          |       |       | Current Period | Forecasted Periods |       |        |       |       |
|-----------|--------------|----------|-------|-------|----------------|--------------------|-------|--------|-------|-------|
| SALES     | January      | February | March | April | May            | June               | July  | August | Sept  | Oct   |
| FORECAST  | 2,000        | 2,000    | 2,000 | 2,050 | 2,100          | 2,100              | 2,100 | 2,150  | 2,150 | 2,150 |
| ACT SALES | 2,150        | 1,950    | 2,200 | 2,150 |                |                    |       |        |       |       |
| DIFF. MO  | 150          | -50      | 200   | 100   |                |                    |       |        |       |       |
| CUM       | 150          | 100      | 300   | 400   |                |                    |       |        |       |       |
| DIFF. %   | 7.50%        | 2.50%    | 5.00% | 4.97% |                |                    |       |        |       |       |

| PRODUCTION |        |        |        |        |       |       |       |       |       |       |
|------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| PLAN       | 2,000  | 2,000  | 2,050  | 2,100  | 2,200 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 |
| ACTUAL     | 1,950  | 2,000  | 2,000  | 2,150  |       |       |       |       |       |       |
| DIFF. MO   | -50    | 0      | -50    | 50     |       |       |       |       |       |       |
| CUM        | -50    | -50    | -100   | -50    |       |       |       |       |       |       |
| DIFF. %    | -2.50% | -1.25% | -1.65% | -0.61% |       |       |       |       |       |       |

| FINISHED GOODS INVENTORY |       |       |       |        |     |      |      |      |      |      |
|--------------------------|-------|-------|-------|--------|-----|------|------|------|------|------|
| PLAN                     | 1000  | 1000  | 1050  | 1100   | 900 | 1100 | 1300 | 1450 | 1600 | 1750 |
| ACTUAL                   | 950   | 1000  | 800   | 800    |     |      |      |      |      |      |
| DIFF. MO                 | -50   | 0     | -250  | -300   |     |      |      |      |      |      |
| CUM                      | -50   | -50   | -300  | -600   |     |      |      |      |      |      |
| DIFF. %                  | -5.0% | -2.5% | -9.8% | -14.5% |     |      |      |      |      |      |
| DAYS ON HAND             | 9.7   | 9.1   | 7.4   | 7.6    | 8.6 | 10.5 | 12.1 | 13.5 | 14.9 |      |

## #6 – Grids and Graphs (cont.)







# #7 – Change Management



“An S&OP project is 60 percent change management, 30 percent process development, and 10 percent technology”\*

Effective drivers of change management:

-  Effecting acceptance towards ownership and restructuring of roles and responsibilities
-  Developing necessary adjustments to company culture and capabilities
-  Training employee's around the appropriate changes
-  Winning support of employees with persuasiveness about the appropriateness of the adjustments

Iyengar and Gupta, “Building Blocks for Successful S&OP,” *Supply Chain Management Review*, Vol. 6, No. 17, 2013, 17

# #8 – Continuous Improvement



“A never-ending effort to expose and eliminate root causes of problems: small-step improvement as opposed to big-step improvement.” *APICS Dictionary*, 14th edition

Continuous improvement is important because:

- ➡ Ideas for process improvement come from the S&OP team participants – hence more realistic
- ➡ S&OP enables continuous monitoring, feedback, and sharing of improvement ideas
- ➡ Once S&OP teams see their ideas are heard, they will continually seek ways to improve their own performance
- ➡ Encourages employees to take ownership and reinforces team working, thereby improving level of motivation

# Benefits of Sales and Operations Planning



- Establishes operational plans consistent with the business plan
- Continually updates the production, financial, and sales plan
- Provides for cross-functional planning
- Establishes regular meetings with senior executives to resolve demand versus supply trade-offs
- Checks availability of resources to validate the production plan
- Increases teamwork and collaborative skills

# APICS Introduction to Sales and Operations Planning (S&OP)

**Additional Resources**



# Resources to Learn More



- APICS S&OP Folios [www.apics.org/sopfolio](http://www.apics.org/sopfolio)
- APICS Principles of S&OP Seminar [www.apics.org/seminars](http://www.apics.org/seminars)
- Best of the Best S&OP Conference [www.apics.org/best](http://www.apics.org/best)
- APICS 2015 [www.apicsconference.org](http://www.apicsconference.org)
- [www.oliverwright-americas.com/inspiring-business-excellence](http://www.oliverwright-americas.com/inspiring-business-excellence)
- Wallace and Company [www.tfwallace.com](http://www.tfwallace.com)  
[www.tfwallace.com/home/free\\_downloads.html](http://www.tfwallace.com/home/free_downloads.html)
- Software
  - Kinaxis <http://www.kinaxis.com/en/>
  - Logility <http://www.logility.com/>
  - DemandCaster <http://demandcaster.com/>
  - Excel [www.microsoft.com](http://www.microsoft.com)

# Congratulations!



- Participation in today's session qualifies for one content hour (SOPE1) toward the APICS S&OP certificate.
- Download the transcript to track your progress and learn how you can qualify for the remaining hours at [www.apics.org/sop](http://www.apics.org/sop).

**SALES AND OPERATIONS PLANNING:  
CURRICULUM TRANSCRIPT**

Name \_\_\_\_\_  
APICS ID (if applicable) \_\_\_\_\_  
Email address \_\_\_\_\_  
Mailing address \_\_\_\_\_  
City, State, ZIP \_\_\_\_\_  
Telephone \_\_\_\_\_

|                                | Code  | S&OP Topics                                     | Date | Location | Instructor |
|--------------------------------|-------|---|------|----------|------------|
| <b>CORE<br/>7 REQUIRED</b>     | SOFC1 | S&OP Foundations                                |      |          |            |
|                                | SOFC2 | The five step S&OP process                      |      |          |            |
|                                | SOFC3 | S&OP inputs - demand and operations planning    |      |          |            |
|                                | SOFC4 | Building and working with S&OP grids and graphs |      |          |            |
|                                | SOFC5 | Managing the output from the S&OP process       |      |          |            |
|                                | SOFC6 | Organizing product families for S&OP            |      |          |            |
|                                | SOFC7 | Attributes, objectives and benefits of S&OP     |      |          |            |
| <b>ELECTIVE<br/>8 REQUIRED</b> | SOPE1 |   |      |          |            |
|                                | SOPE2 |   |      |          |            |
|                                | SOPE3 |   |      |          |            |
|                                | SOPE4 |   |      |          |            |
|                                | SOPE5 |   |      |          |            |

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Signature: \_\_\_\_\_  
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Once you complete the requirements, submit the transcripts to [psadmin@apics.org](mailto:psadmin@apics.org) for processing.

**APICS**

# APICS Introduction to Sales and Operations Planning (S&OP)

## Thank You For Attending!

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We will put these slides on Apics Vancouver Website