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# Why S&OP Success Is So Elusive

*Technical, Organizational, Cultural & Behavioral Elements of Successful S&OP*

**Presented By: Alan G. Dunn, President, GDI Consulting & Training Company**

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## About the Manufacturing Executive Institute (MEI)

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The Manufacturing Executive Institute (MEI) is a training & publishing organization dedicated to bringing relevant knowledge to individuals who are interested in making dramatic performance improvements in their manufacturing & distribution companies.

MEI delivers knowledge to these communities in FOUR distinct ways:

1. Live Training Programs (In-Company & Public).
2. E-Learning Programs, Produced by “Radio MEI.”
3. Publications, MEI Book Store & Other Resources
4. Focused-research projects within the manufacturing & distribution industries.



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## Introducing Your Program Leader... *Alan G. Dunn*

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- President, GDI Consulting & Training Company & Founder, Manufacturing Executive Institute (MEI)
- Executive workshop instructor (34 years) at California Institute of Technology (Caltech) Center for Technology & Management Education (CTME)
- 43 years of manufacturing & distribution industry experience with more than 175 projects in more than 100 companies, across more than 20 countries.
- Current Board of Directorships:
  - Idaho Asphalt Supply... private manufacturer... Independent Director, Chair of the Audit & Compensation Committees.
  - Western Emulsions... private manufacturer... Independent Director.
  - Natural Alternatives International... public-traded manufacturer, (NASDAQ: NAII)... Independent Director, Member of the Audit & Human Resources Committees.
  - APICS... not-for-profit professional association... Past Chair of the Board – 2015, Chair Elect – 2014, Board Member – 2012 thru 2013.
- Actively engaged professional member of APICS, the Society for Human Resource Management (SHRM), the Society of Cost Management (SCM) & the National Council of Corporate Directors (NACD). Recipient of NACD's "2007 Board Member of the Year" Award



## Program Background

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There have been too numerous-to-count books written and speeches delivered about the subject of Sales & Operations Planning (S&OP). So everyone is interested in this subject and apparently every company can benefit from this plethora of articles and ingenious insights... right?

If there is so much available information about S&OP and so many scholars promoting it, why do so many companies report that their S&OP processes perform marginally, at best? Why do so many companies that have implemented S&OP report NO SIGNIFICANT improvements in forecasts and even less improvement in MPS driven efficiencies? Why do so many S&OP tools and systems not result in the benefits that were promised by all these scholars, software suppliers, technicians and practitioners?

Perhaps the answer is that S&OP IS NOT really a "system" for balancing supplies and demands. **Perhaps it is really a manufacturing ecosystem enabler that demands excellence in technical, organizational, cultural and behavioral interfaces to find success in the demand/supply equation.** Perhaps we need to start thinking about S&OP in the context of a non-technical decision-support system that uses certain technical tools, but depends mostly on social, organizational and behavioral enablers to move it from marginal to excellent. Maybe it's time to view S&OP through an enterprise valuation enhancement lens instead of the traditional supply/demand balancing scale.

This presentation delivers a view of S&OP that has been inspired by numerous S&OP processes, observed within numerous manufacturing organizations. It has also been inspired by seemingly unrelated analogs to manufacturing supply and demand management processes, including:

- Chemical manufacturing control rooms.
- NASA mission control systems.
- Collaborative agile product development teams.



In this presentation, participants will learn how to build an S&OP organization that really works. This includes a description of the expectations on key S&OP players, as well as minimum accountabilities. Participants will also learn how to create a physical **S&OP Mission Control Center** that provides necessary tools, workspace and communications capabilities to effectively execute S&OP. Perhaps the most provocative element of this presentation, the presenter will demonstrate the benefits of an S&OP Mission Control Center, how to organize one and how to leverage enabling technology.

At the conclusion of this presentation; technical, organizational, cultural and behavioral impediments to S&OP success will be summarized so that participants can return to their respective companies and begin fixing their marginalized S&OP process. Participants will receive:

- A detailed Competency Model describing EXACT expectations of a world-class Demand Planner.
- A detailed Competency Model describing EXACT expectations of a world-class Master Production Schedule.
- A diagram of well-constructed S&OP Mission Control Center.

We encourage all participants to bring to this presentation their counterparts in the supply/demand management equation. We also encourage all supply chain professionals and their counterparts in marketing and sales to attend. S&OP is a collaborative process between those who initiate and manage demand, and those who are tasked with supplying to that demand. It would be good for all members of these parties to hear the same message!

## Today's Topic is Urgent Because...

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# URGENT

1. S&OP will **NEVER** sustainably & successfully work without constituent roles being clearly defined.
2. Responsibilities of S&OP require a certain amount of formality-in-process be applied in execution.
3. The critical roles in S&OP are mostly not recognized by c-suite executives, and as a result, S&OP success is often doomed from lack of investment.

**Our training mission today is to provide you with tangible solutions to these problems.**



## NASA Inspiration

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## S&OP Process Overview – THREE Functional Elements

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### 1. Predict demands:

- Family
- SKU

### 2. Rationalize demand

### 3. Share demand

### 4. Revenue plan

### 1. Identify demand/supply risks:

- Family
- SKU

### 2. Develop an ending inventory plan that mitigates demand/supply risks

### 3. Achieve working capital targets



### 1. Plan production at the highest level:

- Family
- SKU

### 2. Rationalize production plan

### 3. Meet customer & market demands

### 4. Efficient factory

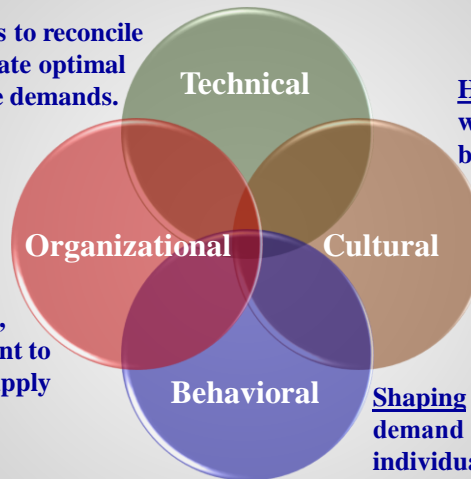
### 5. Utilizing assets & resources

### 6. COGS plan

## S&OP Is a More Than a Supply & Demand Planning System!

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Data, information & algorithms to reconcile marketplace demands & calculate optimal conversion tactics to meet those demands.



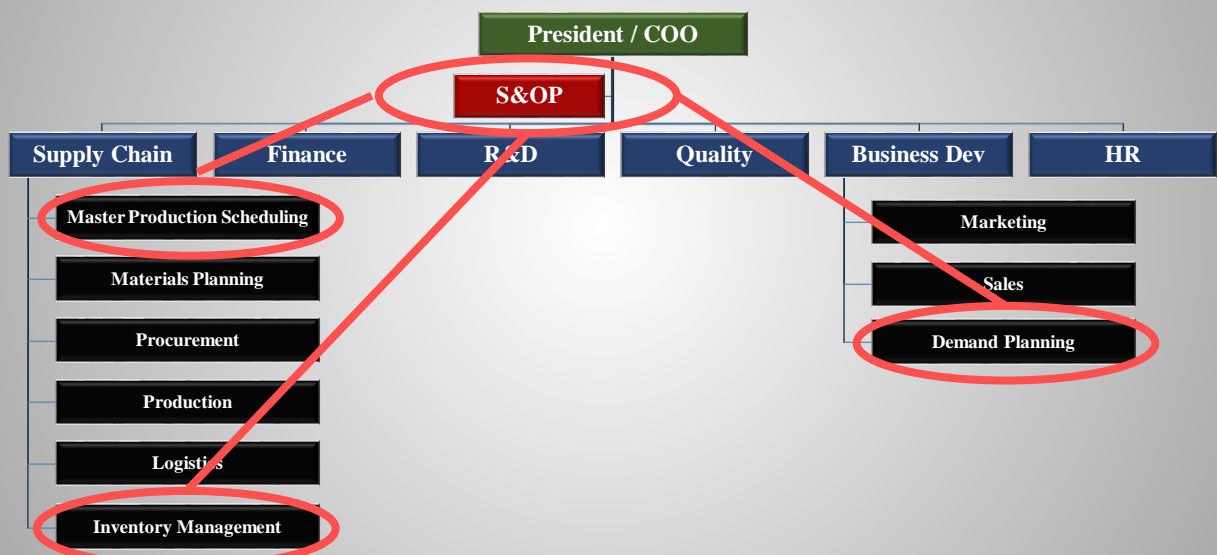
How to drive sustainable execution within the context of enterprise beliefs & values systems.

Defining roles, responsibilities, accountabilities & work content to execute planned demand & supply tactics.

Shaping individual & team approaches to demand & supply conflicts... relegating individual agendas to shareholder agendas.

S&OP is really a manufacturing ecosystem enabler that demands excellence in technical, organizational, cultural & behavioral interfaces to find success in the demand/supply equation.

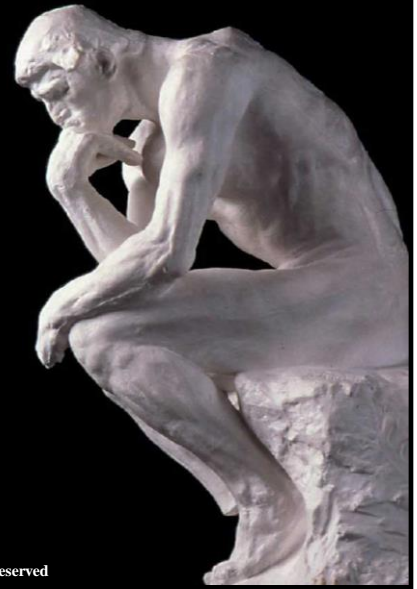
## How S&OP Fits Into a Manufacturing Enterprise



## Moment of Wisdom (MoW)

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**S&OP replaces demand & supply functional biases with a bias toward enterprise valuation enhancement.**



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## S&OP Is Where ALL Planning Begins In a Manufacturing Enterprise

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Master Planning  
“S&OP”



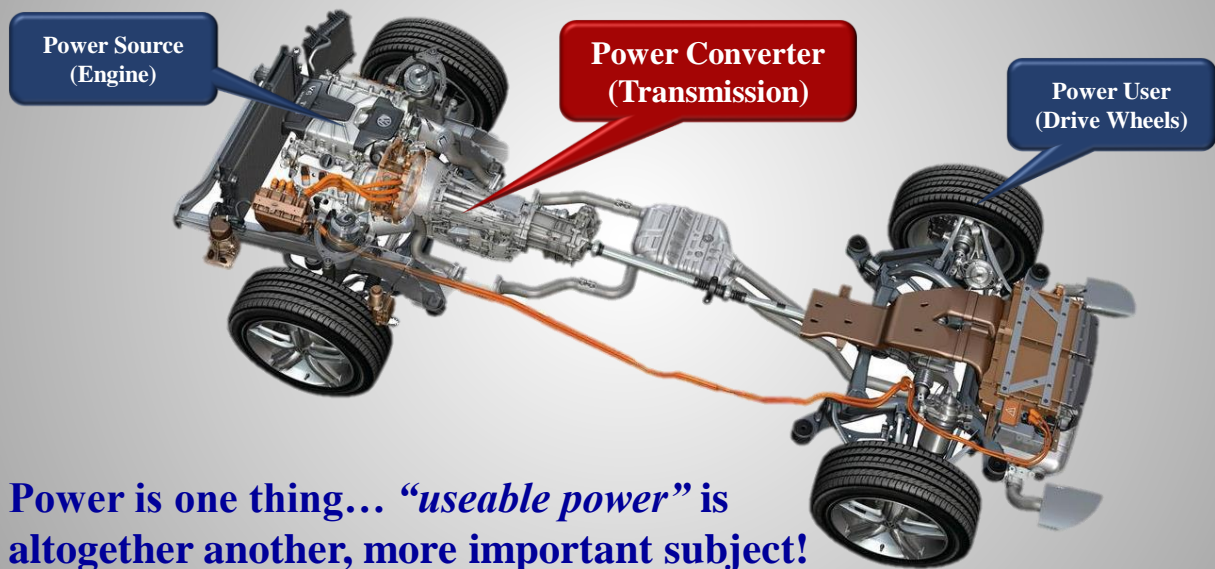
**Aggregate**



**Detail**

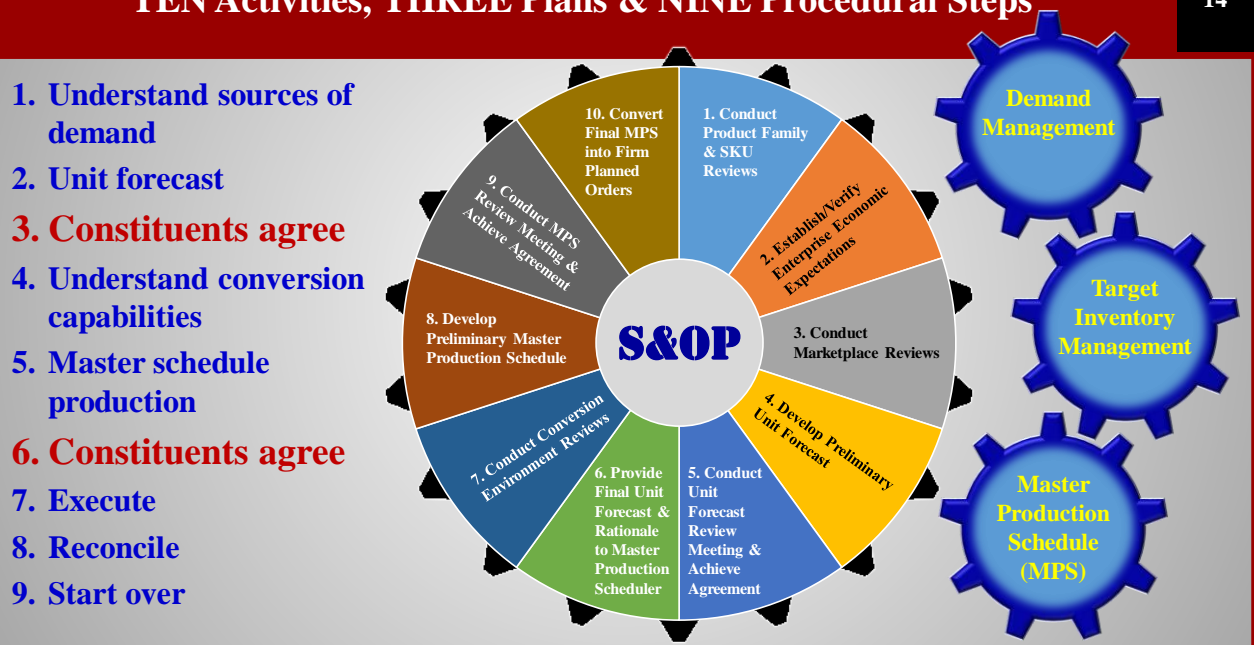
## S&OP Is the “Power Conversion Process” In a Manufacturing Company

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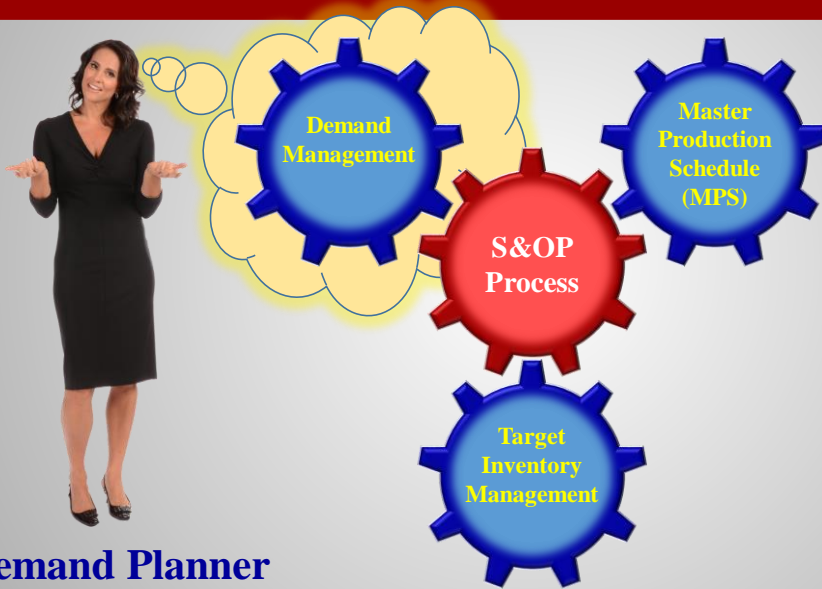
## TEN Activities, THREE Plans & NINE Procedural Steps

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## Who Does What?

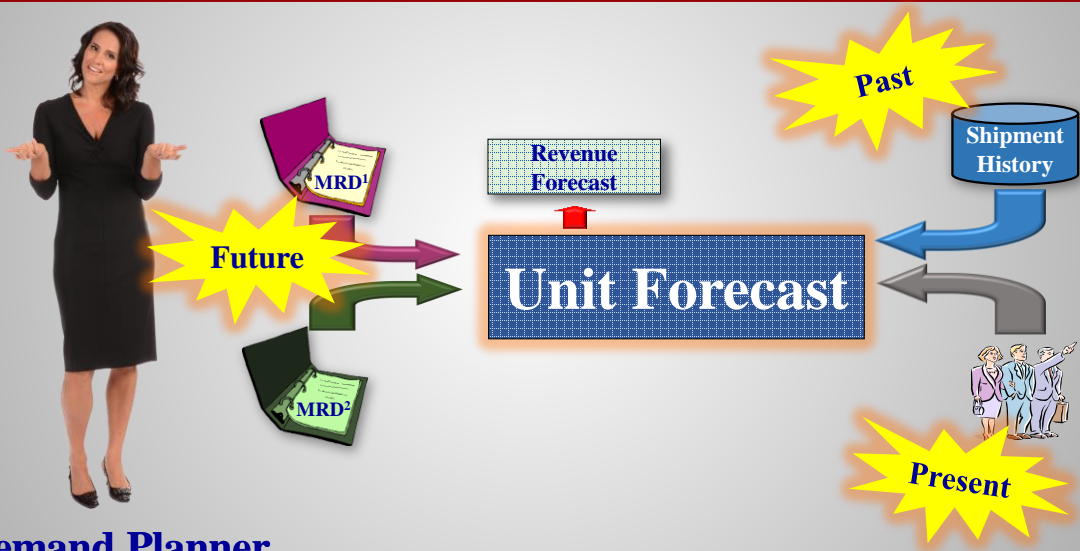
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**Demand Planner**

## Responsibilities of Demand Planner

16

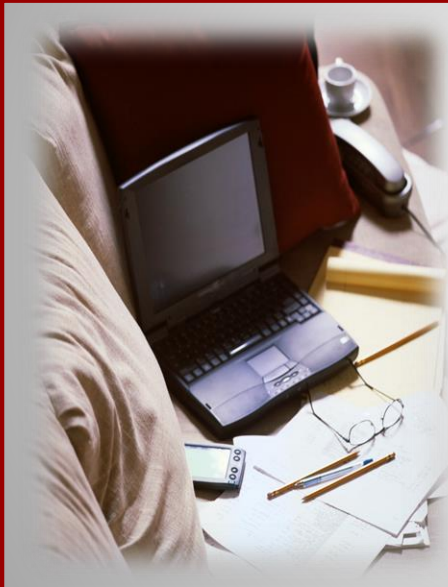


**Demand Planner**



## The Demand Planner Is a *REAL* Job In Most Companies

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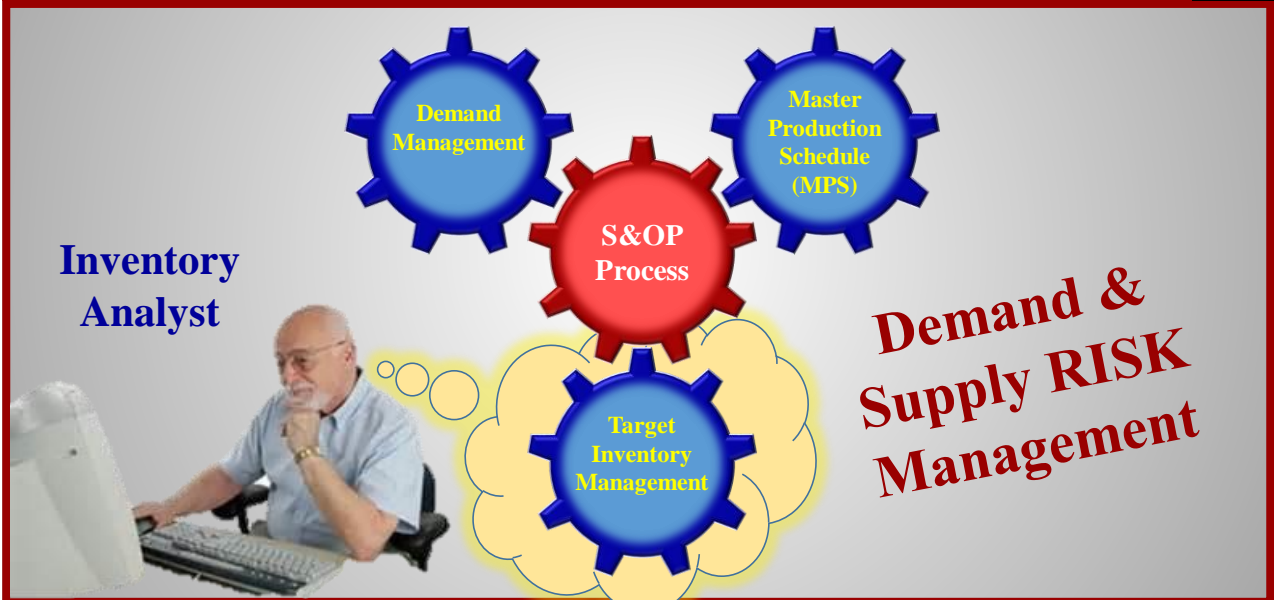
- Requires a full-time individual. Cannot usually be performed effectively on a part-time basis.
- Requires reasonable technology investment in computer hardware & software.
- Must be a power-user of various analytic tools.
- Is a lot of work & requires enormous amounts of good judgement.
- Needs to be in close proximity to Master Production Scheduling & Marketing people.
- Should probably report to an S&OP Office... which should probably report to the President or COO.



**Demand Planner**

## Who Does What?

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## The FOUR Critical Questions a Target Inventory Analyst Needs To Address

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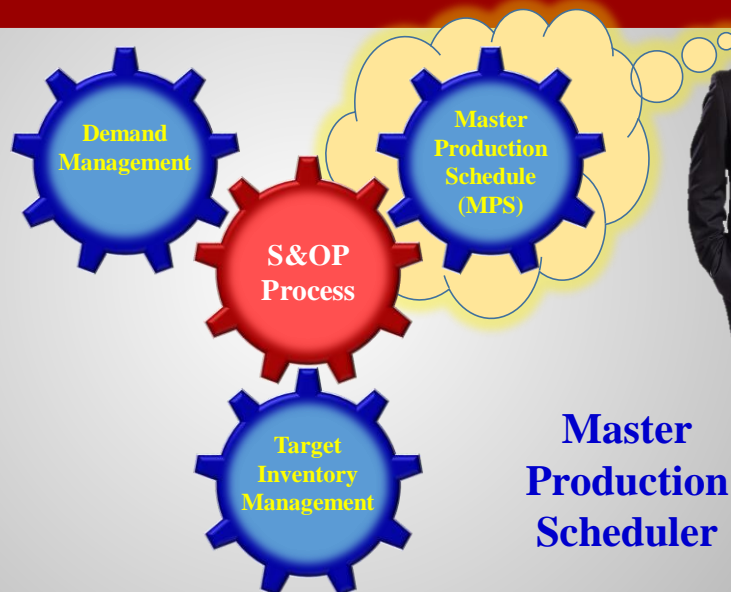


1. Does the inventory serve a purpose?
2. Can the level of inventory be reduced without sacrificing customer service?
3. Can the “*need*” for the inventory be eliminated altogether?
4. Is the level of inventory hiding deeper problems in the enterprise?

**What Is the Inventory Target?**

## Who Does What?

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## SIX Critical Responsibilities of Master Production Scheduler

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1. Establishes MPS Firm-Planned-Orders (FPO's) & ensures that actual production meets scheduled requirements.
2. Creates & maintains a valid MPS (priority due dates, equal need dates, & planned capacity equal required capacity) for material & labor capacities by effectively balancing supply & demand for product.
3. Controls various load factors to ensure maximum usage of available capacity taking into account available labor, tools & equipment.
4. Coordinates production & application engineering operations with the requirements for finished products & the needs for materials & labor.
5. Makes decisions on complex business issues, taking into account complex marketing, engineering & operational requirements.
6. Creates production plans that will utilize resources in the most optimal way & maintain viable production & inventory plans that best fulfill demand requirements.

Excellent execution of this position is vital to the company as it affects how the factory runs, the inventory position & customer service levels.



## A Master Production Scheduler Is a Unique Breed of Person In a Manufacturing Company

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### Master Production Scheduling IS NOT for:

- A novice planner.
- A person who lacks critical thinking skills.
- A person with planning *depth* but little enterprise *breadth*.
- A person who lacks judgment.
- A person who struggles with pressure & deadlines.
- A person who is incapable of exploring all the ways to say "yes."
- A person who is incapable of saying "*no*"... *and meaning it!*

**Master production scheduling is NOT a trainee position!**





## What Is the Master Production Scheduler Trying To Accomplish?

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- ★ 1. Fulfills *real* demand
- 2. Supports unique customer requirements
- ★ 3. Supports an efficient factory
- 4. Minimizes inventory investment
- ★ 5. Makes shipping commitments for Make-to-Order products

## THREE Most Significant Reasons S&OP Has Been Marginalized

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Corporate decision makers have generally:

1. Underestimated the complexities involved when scheduling factories.
2. Have undervalued the skills, experience & judgement required from individuals engaged in the execution of S&OP activities.
3. Reporting to a “*biased*” leader.

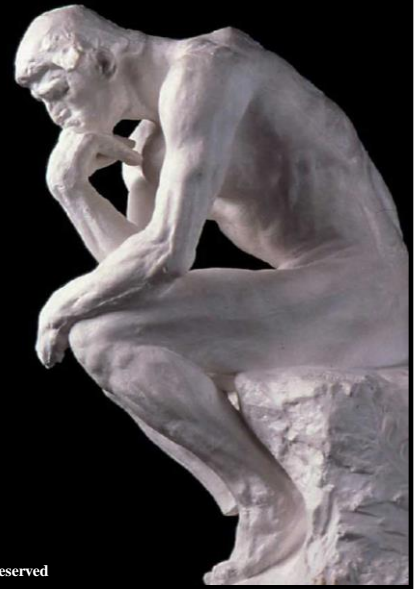


## Moment of Wisdom (MoW)

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**S&OP is more than a “*planning system*.” It is an ecosystem comprised of technical, organizational, cultural & behavioral enablers that seeks to routinely establish reasonably good tactical plans that balance the supply & demand equation in the best interest of the total enterprise.**

**S&OP requires data, tools, knowledgeable people, depth & breadth of experience... and enormous amounts of judgement... to execute properly.**



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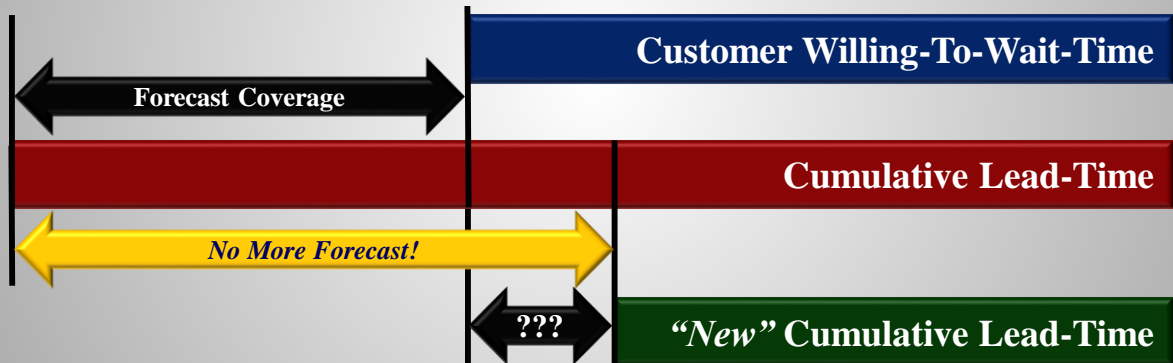
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## Demand Planning

## We Need To Understand *Why* We Forecast In the First Place

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**We forecast because our cumulative lead-time is greater than the time our customers are willing to wait!**



## The ABSOLUTE BEST Answer....

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**Reduce Cumulative Lead Times!**

## The ABSOLUTE BEST Answer....

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## THREE Inputs to a Demand Plan

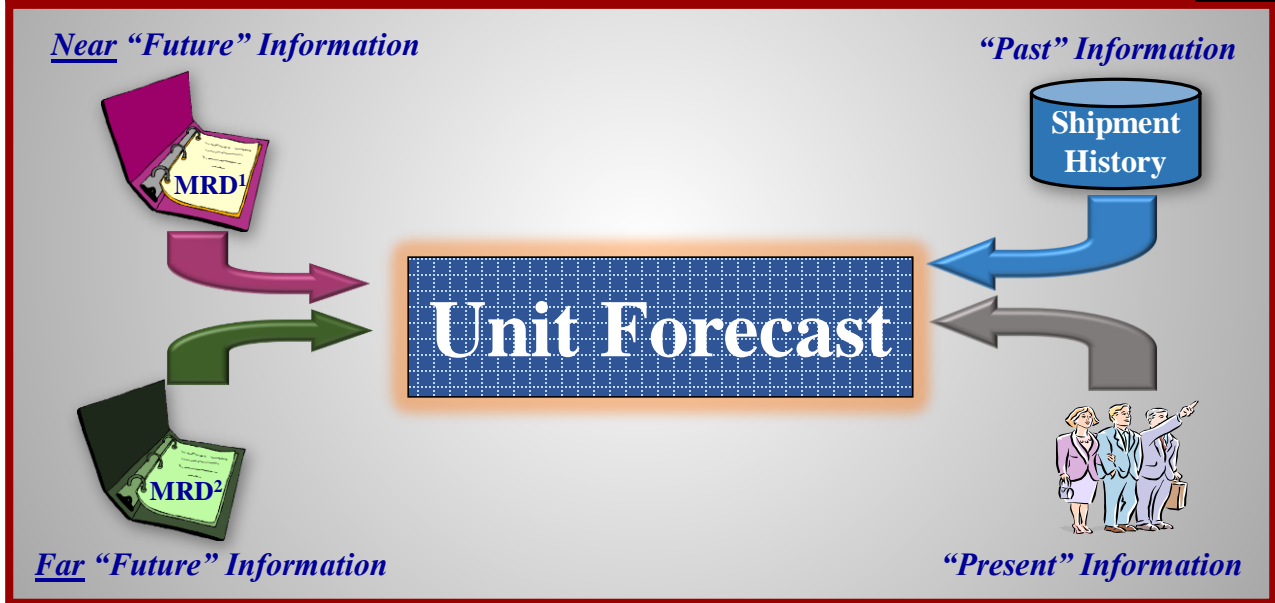
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1. Past
2. Present
3. Future



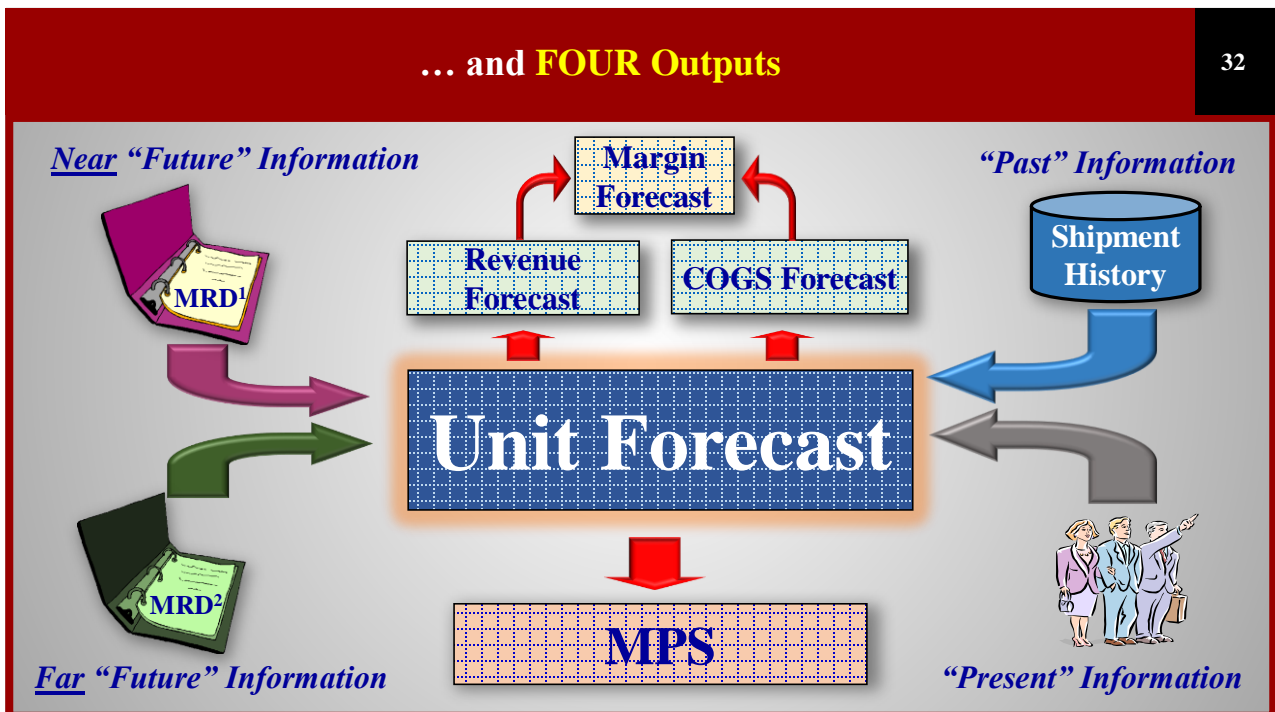
## A Better Way To Look at a Comprehensive Demand Management System... *FOUR Discrete Inputs*

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## ... and **FOUR** Outputs

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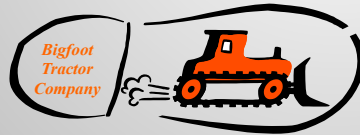




## Sample Multi-Source Forecast – *Multiple-Year Look Back*

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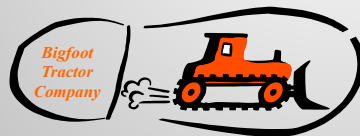
			99000 Industrial Tractor Final Assembly... Historically-Based Forecast													Total	Net Forecast Error
			Firm Periods			Firm + Forecast Periods				Forecast Periods Only							
			Period +1	Period +2	Period +3	Period +4	Period +5	Period +6	Period +7	Period +8	Period +9	Period +10	Period +11	Period +12			
Historical Forecasting	Year -2	Year -2 S&OP Forecasted Demand	298	302	302	310	326	332	600	593	640	320	325	328	4,676	-1.37%	
		Year -2 Actual Demand	281	310	309	321	320	341	579	502	644	329	350	326	4,612		
		Year -2 Forecast Error %	(17)	8	7	11	(6)	9	(21)	(91)	4	9	25	(2)	(64)		
	Year -1	Year -1 S&OP Forecasted Demand	333	332	333	333	345	351	642	659	662	360	659	370	5,379	15.95%	
		Year -1 Actual Demand	329	333	333	1,103	355	348	701	691	655	371	647	371	6,237		
		Year -1 Forecast Error %	(4)	1	0	770	10	(3)	59	32	(7)	11	(12)	1	858		
	Historical Models	Historically-Based Forecast Model #1	372	377	377	756	381	388	800	814	815	391	391	394	6,256		
		Historically-Based Forecast Model #2	371	382	377	900	383	389	803	809	818	290	490	395	6,407		
		Historically-Based Forecast Model #3	366	371	369	825	388	387	811	818	812	389	294	399	6,229		
		Selected Historically-Based Forecast	371	382	377	900	383	389	803	809	818	290	490	395	6,407		
Adjustments & Final Historical Forecast	Extraordinary Demand Adjustments				(525)									(525)			
	Period-Shifted Demand Adjustments										100	(100)		0			
	Final Historically-Based Forecast		371	382	377	375	383	389	803	809	818	390	390	395		5,882	



## Sample Multi-Source Forecast – *Multiple-Regions Look Forward*

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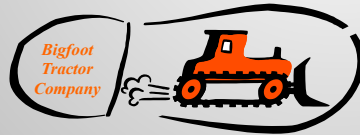
			99000 Industrial Tractor Final Assembly... Rolled-Up Forecast													
			Firm Periods			Firm + Forecast Periods				Forecast Periods Only						Total
			Period +1	Period +2	Period +3	Period +4	Period +5	Period +6	Period +7	Period +8	Period +9	Period +10	Period +11	Period +12		
Rolled-Up Forecast	Region 1	Region-1 Forecast	gdi	100	100	100	100	100	200	200	200	100	100	100	1,400	
		Region-1 Forecast Adjustments							(25)	(25)	(25)				(75)	
		Net Region-1 Forecast	0	100	100	100	100	100	175	175	175	100	100	100	1,325	
	Region 2	Region-2 Forecast	50	50	50	50	50	50	100	100	100	50	50	50	750	
		Region-2 Forecast Adjustments	10	10	10	10	10	10				5	5	5	75	
		Net Region-2 Forecast	60	60	60	60	60	60	100	100	100	55	55	55	825	
	Region 3	Region-3 Forecast	150	150	150	150	150	150	300	300	300	150	150	150	2,250	
		Region-3 Forecast Adjustments							110	110	110				330	
		Net Region-3 Forecast	150	150	150	150	150	150	410	410	410	150	150	150	2,580	
	Aggregate	Aggregated Regions Forecast	210	310	310	310	310	310	685	685	685	305	305	305	4,730	
		Aggregated Regions Forecast Adjustments		10	10	10	10	10	(50)	(50)	(25)	(40)	(40)		(155)	
		Net Aggregated and Adjusted Forecast	210	320	320	320	320	320	635	635	660	265	265	305	4,575	



## Sample Multi-Source Forecast – *Composite View*

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99000 Industrial Tractor Final Assembly... Demand Reconciliation														
Demand Reconciliation	Firm Periods			Firm + Forecast Periods				Forecast Periods Only					Total	
	Period +1	Period +2	Period +3	Period +4	Period +5	Period +6	Period +7	Period +8	Period +9	Period +10	Period +11	Period +12		
Sales Goal (Informational Only)	400	400	400	400	400	400	900	900	900	450	450	450	6,450	
Final Historically-Based Forecast	371	382	377	375	383	389	803	809	818	390	390	395	5,882	
Net Aggregated and Adjusted Regions Forecast	210	320	320	320	320	320	635	635	660	265	265	305	4,575	
Forecast "Selected" for S&OP	371	382	377	375	383	389	803	809	818	390	390	395	5,882	
"Field-Based <u>Present</u> " Adjustments to Forecast	25	(100)	100										25	
"Marketing-Based <u>Future</u> " Adjustments to Forecast							100	100	100				300	
Total "Present" & "Future" Forecast Adjustments	25	(100)	100	0	0	0	100	125	100	0	0	0	350	
Adjusted "Plannable" Forecast	396	282	477	375	383	389	903	934	918	390	390	395	6,232	
Booked-to-Ship Future "Actual" Orders	390	296	494	331	411	268	502						2,692	
Reconciled Demand to Factory	390	296	494	375	411	389	903	934	918	390	390	395	6,285	
Reconciled Demand = Actual Demand Only				Reconciled Demand = The Larger of Actual or Adjusted "Plannable" Forecast				Reconciled Demand = Adjusted "Plannable" Forecast Only						



## A Little Story About Prince Turki bin Faisal Al Saud, Dad Miller, Golf Cars, Sales Forecasting & Extraordinary Demand... & *Some Common Sense*

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Demand Reconciliation	99000 Industrial Tractor Final Assembly... Demand Reconciliation													
	Firm Periods			Firm + Forecast Periods				Forecast Periods Only					Total	
	Period +1	Period +2	Period +3	Period +4	Period +5	Period +6	Period +7	Period +8	Period +9	Period +10	Period +11	Period +12		
	Sales Goal (Informational Only)	400	400	400	400	400	400	900	900	900	450	450	450	6,450
	Final Historically-Based Forecast	371	382	377	375	383	389	803	809	818	390	390	395	5,882
	Net Aggregated and Adjusted Regions Forecast	210	320	320	320	320	320	635	635	660	265	265	305	4,575
	Forecast "Selected" for S&OP	371	382	377	375	383	389	803	809	818	390	390	395	5,882
	"Field-Based Present" Adjustments to Forecast	25	(100)	100										25
	"Marketing-Based Future" Adjustments to Forecast							100	100	100				300
	Total "Present" & "Future" Forecast Adjustments	25	(100)	100	0	0	0	100	125	100	0	0	0	350
Adjusted "Plannable" Forecast	396	282	477	375	383	389	903	934	918	390	390	395	6,232	
Booked-to-Ship Future "Actual" Orders	390	296	494	331	411	268	502						2,692	
Reconciled Demand to Factory	390	296	494	375	411	389	903	934	918	390	390	395	6,285	
Reconciled Demand = Actual Demand Only				Reconciled Demand = The Larger of Actual or Adjusted "Plannable" Forecast				Reconciled Demand = Adjusted "Plannable" Forecast Only						



**X 3,000 !**



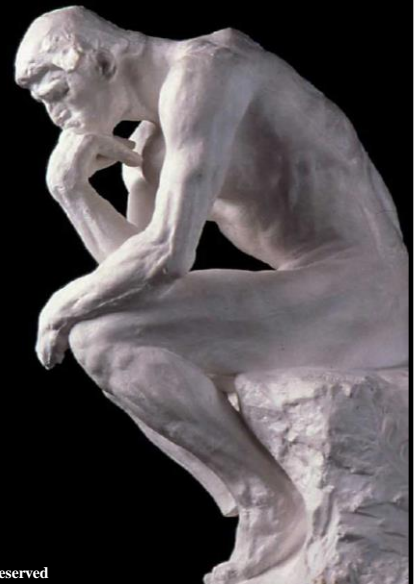
## Moment of Wisdom (MoW)

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**A sales goal drives sales professionals.**

**A unit forecast drives inventory, production investments and asset utilization.**

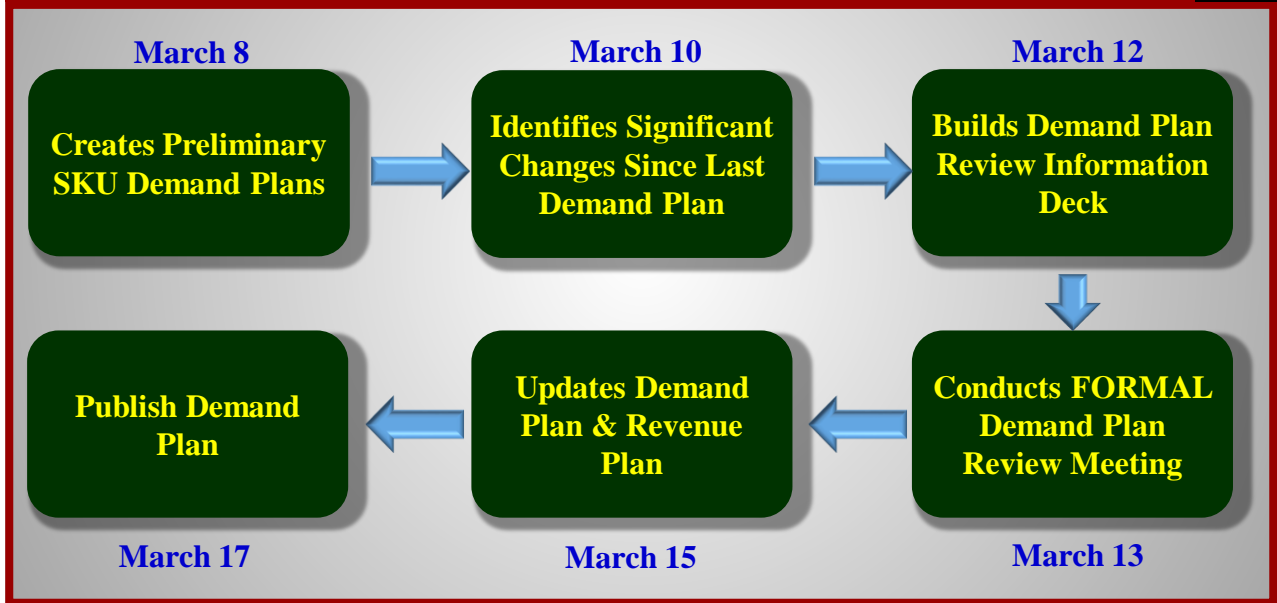
**NEVER treat them as equivalents!**



## The Monthly Demand Planning Work Flow

*A Rough Schedule*

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## Target Inventory Planning



## Target Inventory Planning

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Target inventory planning is the process of developing a “*target*,” or desired level of inventory to satisfy customer demands AND manage supply chain risks.

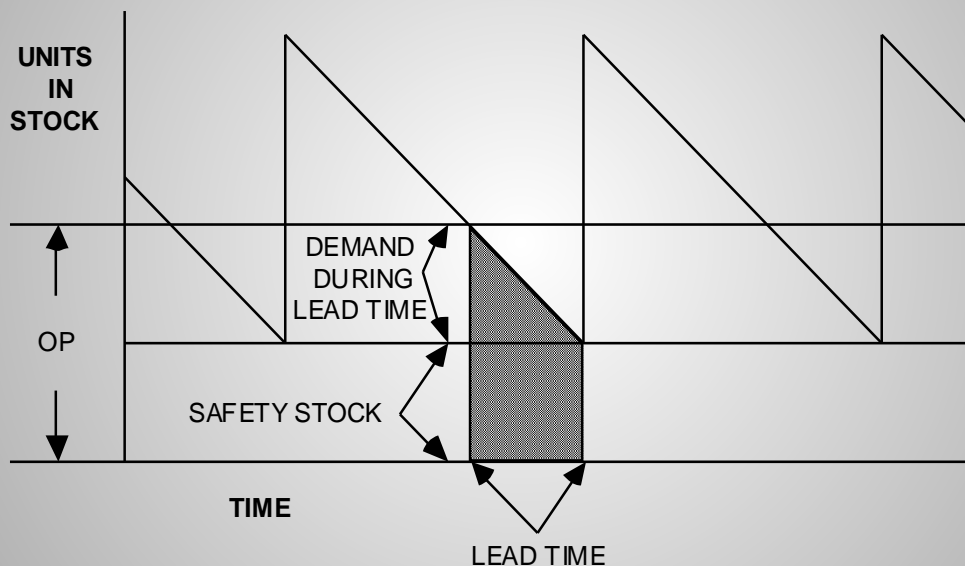
The inventory is maintained at or close to the level through the development of reorder points, safety stocks & demand planning.

This form of inventory management is appropriate only for finished goods items.



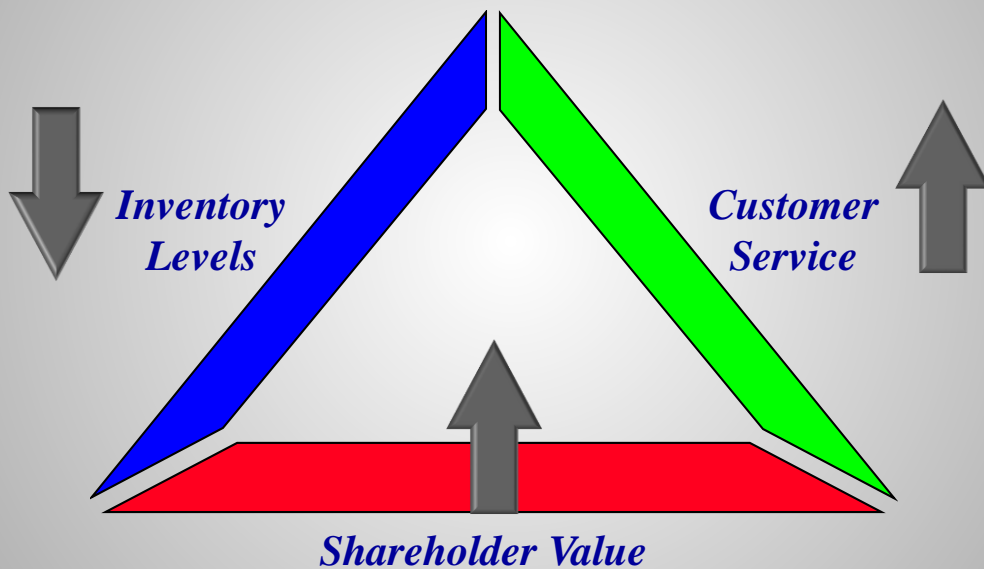
## The Heart & Soul of the Inventory Analyst's Work

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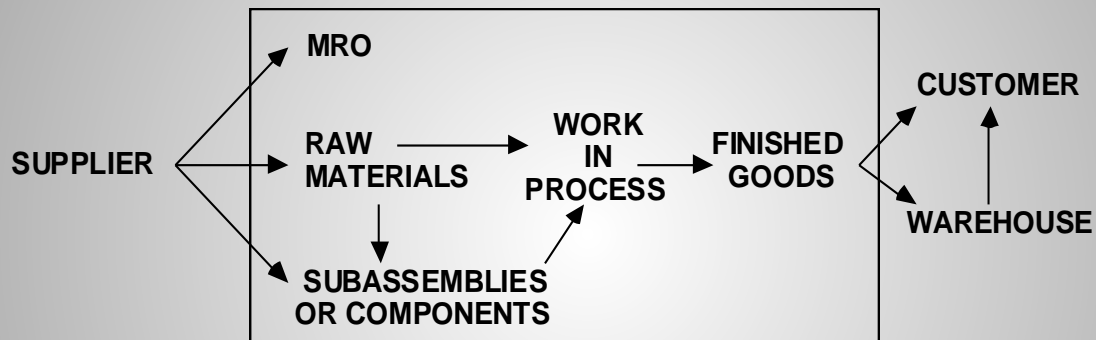
## It is All About Tradeoffs

43



## Flow of Inventory Between States

44



***Incredibly Important Rule:*** You always want to leave your inventory in the rawest state possible. By keeping your inventory in raw material, you have more alternative uses of the materials. Once you make it into a finished good, you can only sell it in the form it is made into.

## Dunn's 1<sup>st</sup> Irrefutable Law About Inventory

45



**Inventory is the GIANT  
Sucking Sound of Capital!**

... and NEVER Forget that Inventory is Often the LARGEST  
& Most VOLATILE Element of Working Capital...

46

*“Working capital is the  
investor’s microscope  
into the competency of  
operations  
management”*

- ▶ Cash
- ▶ Raw Materials
- ▶ Work in Process
- ▶ Finished Goods
- ▶ Inventories
- ▶ Accounts Receivable  
Net of Accounts Payable



# Master Production Scheduling

## Master Production Schedule

A Master Production Schedule (MPS) is a manufacturing plan that quantifies significant processes, parts, and other resources in order to optimize production, to identify bottlenecks, and to anticipate needs and completed goods. Since an MPS drives much factory activity, its quality dramatically affects a factory's profitability. Typical MPS's are created by software with significant user input and tweaking.

Due to software limitations, but especially the intense work required by the "*Master Production Schedulers*," schedules do not include every possible aspect of production, but only key elements that have proven their control effectivity, such as working hours, machines, available storage, and parts supply. The choice of what to model vary between companies and even between factories. The MPS is a statement of what the company expects to produce and purchase expressed in selected items, specific quantities and dates.

The MPS translates the business plan, including forecast demand, into a production plan using planned orders in a true multi-level optional component scheduling environment. Using MPS helps avoid shortages, costly expediting, last minute scheduling, and inefficient allocation of resources. Working with MPS allows to consolidate planned parts, produce master schedules and forecasts for any level of the Bill of Material (BoM) for any type of part.

## Master Production Scheduling May Be the MOST Important Technical Position In Supply Chain Management

49

1. Balance supply “to” demands.
2. Schedule the factory as “smooth” as possible.
3. Meet forecasted & actual demands.
4. Compensates for unknown issues.
5. Uses lots of judgment.
6. MPS determines the fixed-cost absorption rate.
7. Final MPS becomes the COGS budget.



## What Is the Master Production Scheduler Trying To Accomplish?

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- ★ 1. Fulfills *real* demand.
- 2. Supports unique customer requirements.
- ★ 3. Supports an efficient factory.
- 4. Minimizes inventory investment.
- ★ 5. Makes shipping commitments for Make-to-Order products.



## Master Production Schedule

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Part Number: 99000

Description: Industrial Tractor Final Assembly

Lead Time: 1 week

Safety Stock: 10

Lot Size: 10

Quantity Per: 1

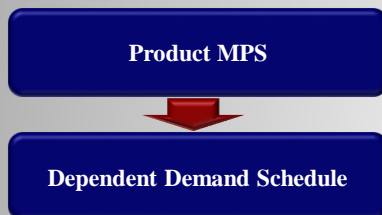
Product Level MPS	0	1	2	3		4	5	6	7		8	9	10	Horizon Totals
Sales Unit Goal (SUG)		40	40	40		45	45	50	50		50	50	50	460
Production Forecast Units (PFU)		36	36	36		36	36	36	38		40	40	36	370
Firm Planned Order Units (FPOU)		30	30	30		30	30	40	40		40	40	30	340
Projected Period-End Balance Units (PPEBU)	40	34	28	22		16	10	14	16		16	16	10	
		Firm Periods				Firm + Forecast Periods					Forecast Only Periods			

- How do we determine the “Unit Forecast” line above?
- How do we determine the “Firm-Planned Order” line above?
- How do we determine the “Projected Period-End Balance” line above?

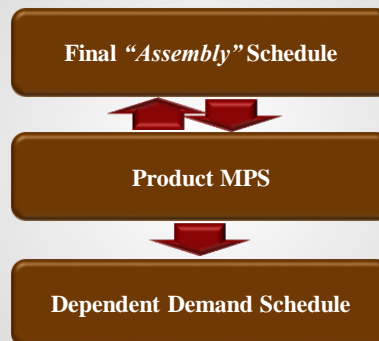
## Three Different Master Production Scheduling Environments

52

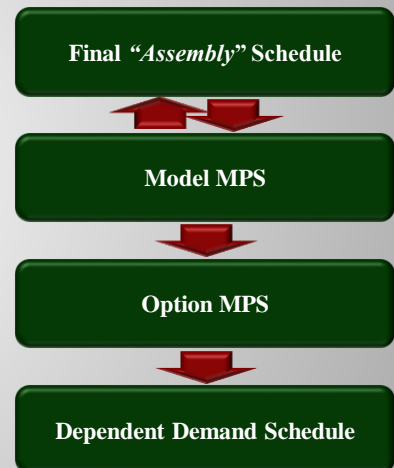
### Make-to-Stock MPS



### Make-to-Order MPS

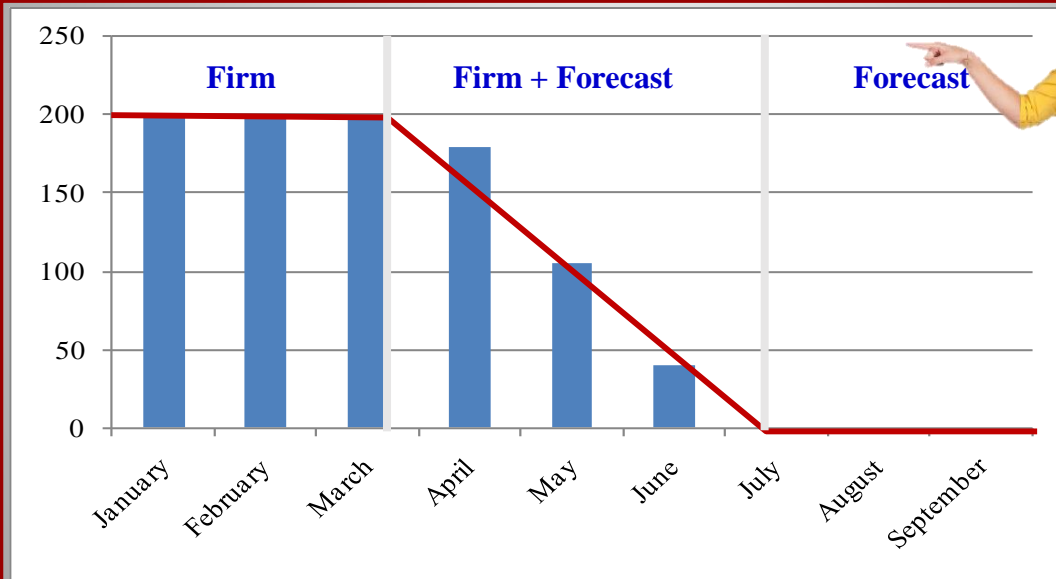


### Highly Configured MPS



## The Back Log Curve

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## Typical Master Production Schedule – *Make to Stock*

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Master Scheduling Worksheet - End Item - Make to Stock										
Master Schedule Item #	99000	Description		Industrial Tractor				Maximum Production		200
Lead-Time	2 Weeks									
Target Inventory	400	Period 0	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Weekly Sales Goal			120	120	120	150	150	100	100	100
Forecasted Weekly Demand			110	110	100	150	150	100	175	110
Weekly Scheduled Receipts				200						
Weekly Firm Planned Orders					151	151	151	151	151	150
Week-Ending Projected On-Hand	300		190	280	331	332	333	384	360	400
										Horizon Totals
										960
										1,005
										200
										905

How does the Master Production Scheduler determine the weekly FPO's?

## Typical Master Production Schedule – *Make to Order*

55

Master Scheduling Worksheet - End Item - Make to Order										
Master Schedule Item #	99000	Description		Industrial Tractor			Max Production		200	
Lead-Time	2 Weeks	(Firm Only Period)		(Firm & Forecast Period)			(Forecast Only Period)		Horizon Totals	
Target Inventory	400	Period 0	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Weekly Sales Goal			120	120	120	150	150	100	100	100
Forecasted Weekly Demand			110	110	100	150	150	100	175	110
Booked-to-Ship Weekly Demand			120	105	260	90	25	0	0	0
Reconciled Weekly Demand			120	105	260	150	150	100	175	110
Weekly Scheduled Receipts				200						
Weekly Firm Planned Orders					184	184	184	184	184	184
Week-Ending Projected On-Hand	300		180	275	199	233	267	317	326	400
Weekly Available-to-Promise			180	95	(76)	94	159	184	184	184
Cumulative Available-to-Promise			180	275	199	293	452	477	661	845

How does the Master Production Scheduler determine the weekly FPO's?

## The Master Production Scheduler DAILY Mission

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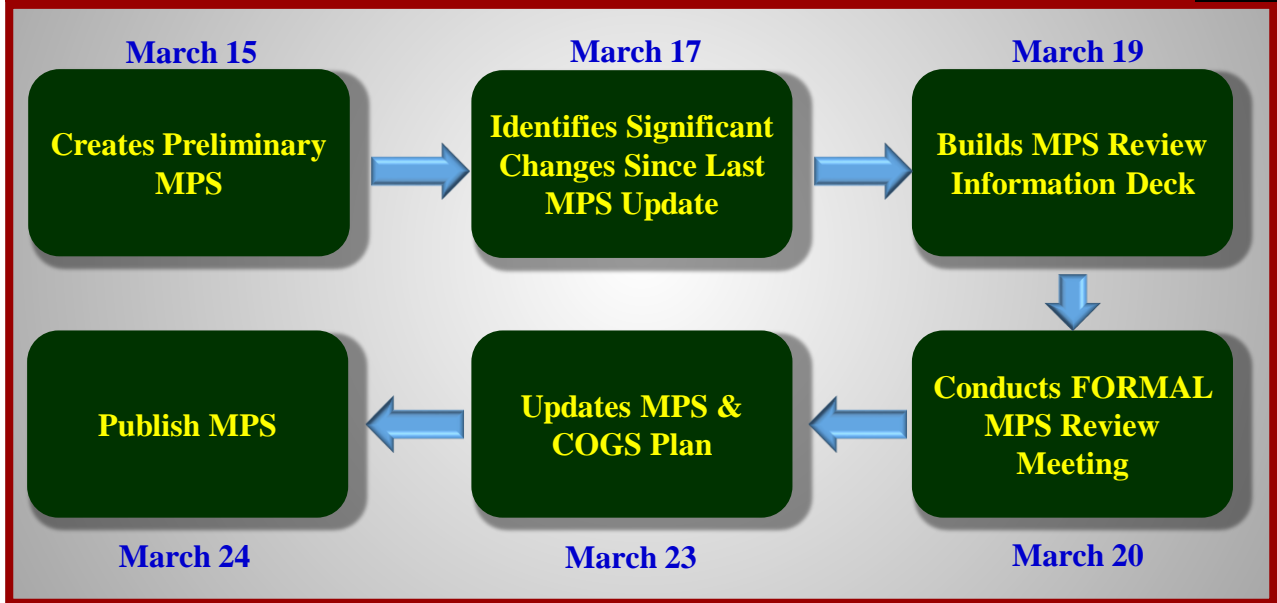


1. Meet the reconciled demands.
2. Achieve the target inventory levels.
3. Plan an efficient run rate.
4. Commit accurate delivery dates (in make-to-order environments).
5. Respond to changing demand, supply & resource conditions.

## The Monthly Master Production Scheduling Work Flow

### *A Rough Schedule*

57

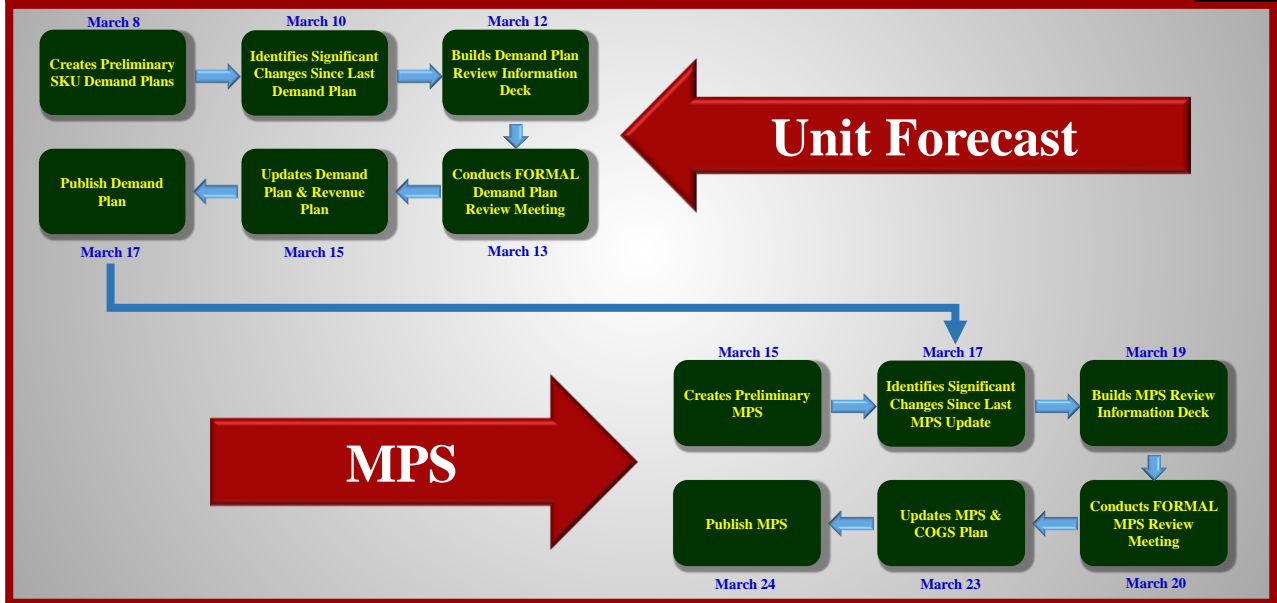


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## Bring S&OP to Life

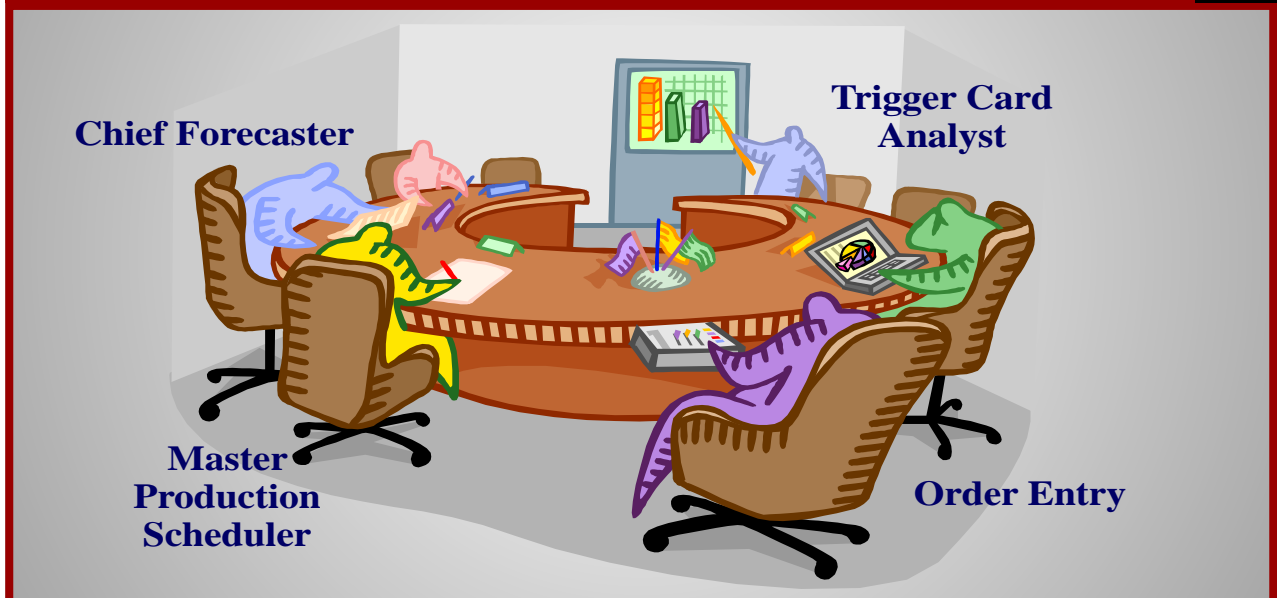
## Combined S&OP Work Flows

59



## "Knights of the S&OP Roundtable"

60





## S&OP Inspired By NASA

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## S&OP Inspired By Chemical Manufacturing

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## The Inspired S&OP Control Room

63

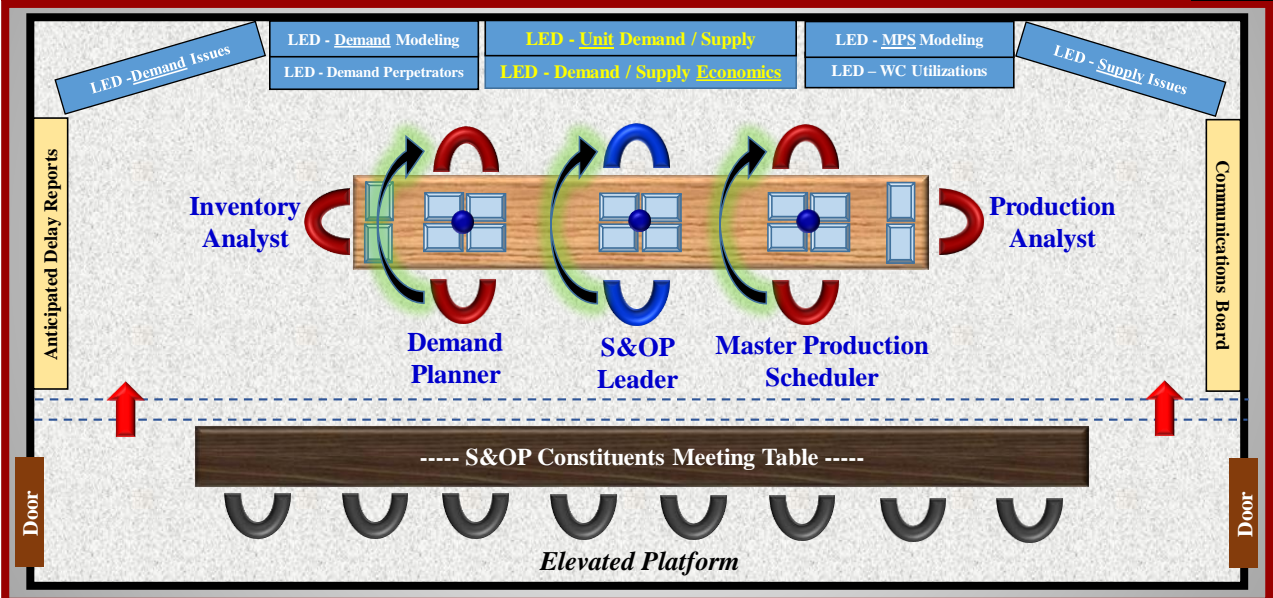


### Clear assignment of:

- ▶ Information rights
- ▶ Decision rights
- ▶ Execution rights


## “S&OP Control Rooms” are Always a GREAT Idea!

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## The S&OP Team *NEEDS* To Know What Is Going On In the Factory

65



Source	Anticipated Delay	Anticipated Impact
Alan	Barrel Mixer making sounds	Alfalfa in jeopardy
Mary	Solgammo late on wheat powder	Several orders in jeopardy
Frank	Two operators out sick for >1 week	Will not be able to clean machines between shifts

## The Effective S&OP Process – SIX Requirements

66

### 1. Good data that is useable to make decisions:

- a. Demand data
- b. Supply data
- c. Resource data
- d. Product data
- e. Economic data





## The Effective S&OP Process – SIX Requirements

67

2. **Sequentially structured formal meetings that each have a stated purpose & a clear mission:**
  - a. **Market Conditions Meeting.**
  - b. **Pre-Forecast Meeting.**
  - c. **Forecast Review Meeting.**
  - d. **Pre-MPS Meeting.**
  - e. **Demand/MPS Reconciliation Meeting.**



## The Effective S&OP Process – SIX Requirements

68

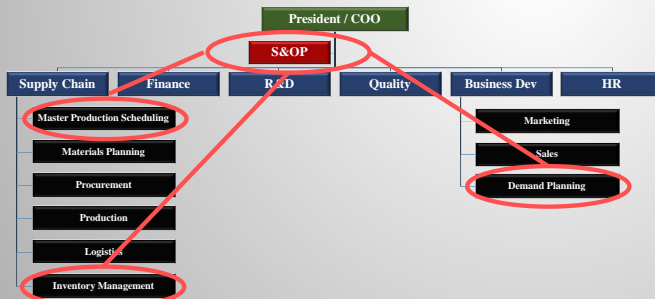
3. **Clear actions specified after each meeting.**
4. **Unambiguous communications of those actions to the wider constituents.**
5. **Measurement of results & determination of adjustments to plans.**



## The Effective S&OP Process – SIX Requirements

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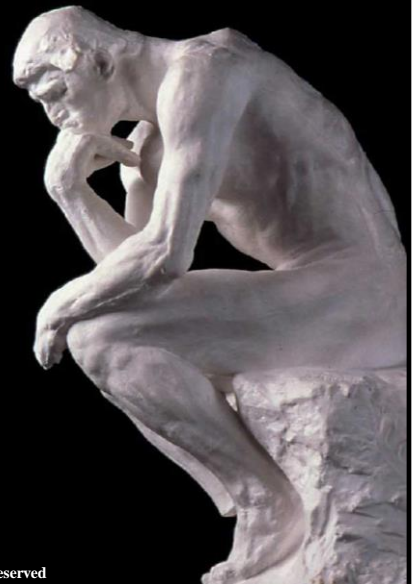
6. Reports high enough in the enterprise to remove market-centric and supply-centric biases... replace these biases with a bias toward reality and sustainable valuation enhancements.



## Final Moment of Wisdom (MoW)

70

Its time to begin thinking about S&OP in the context of a non-technical decision-support system that uses certain technical tools, but depends mostly on social, organizational & behavioral enablers to move it from marginal to excellent. Maybe it's time to view S&OP through an enterprise valuation enhancement lens instead of the traditional supply/demand balancing scale.





## Thank You for Attending Another APICS-OC Professional Development Program

*Sponsor & Producer Contact:*



*Presenter Contact: Alan G. Dunn, President*



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## More About MEI, Our Sponsor & Our Presenter's Companies

***GDI* Consulting & Training**  
Making Breakthrough Changes at Breakneck Speed!



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**RADIO MEI**



***GDI* Supplier Assessment Practice**

Substantial Risk	Critical Risk	Moderate Risk	Manageable Risk	Minor Risk	No Risk
------------------	---------------	---------------	-----------------	------------	---------

***GDI* Talent Acquisition Practice**

Specify | Source | Evaluate | Profile | Engage | Onboard

***GDI* Owner & Investor Services Practice**

Governance | Ops Due-Diligence | Valuation Enhancement

We can bring numerous professional services to our manufacturing and distribution clients... all focused on making people and companies more successful.

## More Details About Your Program Leader... *Alan G. Dunn*

**Alan G. Dunn** is President of **GDI Consulting & Training Company** and is the founding sponsor of the **Manufacturing Executive Institute (MEI)**, a manufacturing industry training provider. Before founding GDI, Mr. Dunn was a Vice President at **Gemini Management Consulting** and a Partner at **Coopers & Lybrand** (now **PricewaterhouseCoopers**). In both positions, Mr. Dunn was responsible for leading large teams of technical manufacturing consultants in innovative productivity enhancement projects. For the ten years prior to joining Coopers & Lybrand, Mr. Dunn was President, (and Founder) of **ADI**, a successful systems implementation consulting and training company that Mr. Dunn sold to Coopers & Lybrand in 1990.

In addition to his 40 years of technical and management consulting experience, Mr. Dunn has several years of line leadership experience in manufacturing environments. He has extensive background in most functions within manufacturing companies and has participated in over 150 manufacturing and distribution consulting projects in over 100 companies. Mr. Dunn has consulted in more than 20 countries and across most manufacturing industrial sectors.

Significant companies that Mr. Dunn has consulted with: 3-Com, ABEX, Air Cargo, Air Logistics Corp., Akzo, Alcon, AlliedSignal, AMCOR, American Cyanamid, Amgen, Applied Automation, Applied Materials, Argon, Arkema Chemical, Associated Spring, AT&T, Baker Hughes, Ballard Power Systems, Banner Pharmacaps, Baxter, Beckman Smithline, Bentley Labs, Boeing, Borg Warner, Bystrom Bros., Canon, Caterpillar, Chamberlain Manufacturing, Chao Chocolates, Ciba Geigy, CitiCorp, Cooper Vision, Costa Rica – Department of State, CSC, Cutter Labs, Cyberamics, Daimler-Chrysler, Danaher, Datametrics, Data Products, Davis Wire, Ellison Glass, Emerson Electric, Engaged Capital, Fairchild, Fleetwood, Fluke, Ford Motor Company, General Instrument, General Valve, Halliburton, Hewlett Packard, HOERBIGER, Hoffinger Industries, General Motors, Health Net, IBM, ICV Partners, Intel, Intruder Prevention Systems, ITT, Johnson & Johnson, Johnson Valves, Klane Industries, Lear Siegler, Litton Industries, Lockheed Martin, Loral, Marcy Fitness, McElroy Manufacturing, MonierLifeite, Nalley's Fine Foods, Natural Alternatives International, NCR, Netherlands Economic Development Agency, Northrop Grumman, Pacific Scientific, Packard Bell, PaperPak, Parker Hannifin, Peerless Trailers, Perceptronics, PG&E, Phelps-Dodge, Pilkington International, Plantronics, Poly, Proxima, Quotron, Rain Bird, Reda Pumps, Relational Investors, Rexnord, R.W. Lyall, Schlumberger, Siemens, Signet Scientific, Sony Corporation, Starr Surgical, Stauber Nutritional, Sun Microsystems, Sybron Dental Specialties, Systems Industries, Taylor, Guitars, Technicolor, Teledyne, Tellabs, Teradata, Teradyne, Thomwood Furniture, Tools & Metals, Toshiba Corporation, Trans-Continental Manufacturing Company, Trailmobile, Tropitone, Tycom Industries, Tylan Corp., United Technologies, U.S. Borax, the U.S. Department of Energy, U.S. Navy, Warner Bros., Whittaker International & Xerox.

Mr. Dunn regularly presents executive workshops at the **Center for Technology & Management Education (CTME)** of the **California Institute of Technology (Caltech)** in Pasadena, California. He also instructs and manages the **CTME Next Generation Global Supply Chain Leadership Certificate Program** at Caltech. Mr. Dunn is also a regular instructor at the **Manufacturing Executive Institute (MEI)**, where he presents numerous workshops and web-enabled training programs. Over the duration of his career, Alan has developed and presented a significant number of multi-day executive workshops at numerous other venues throughout the world.

Mr. Dunn has substantial experience in organization governance; having served on numerous private, public and non-profit Boards of Directors. Substantial current and past Board of Director positions include

- **Idaho Asphalt Supply...** private manufacturer... current Independent Director + Chair of the Audit and Compensation Committees.
- **Bystrom Bros...** private manufacturer... past Independent Director + Member of the Audit and Compensation Committees.
- **Natural Alternatives International...** public-traded manufacturer, (NASDAQ: NAI)... current Independent Director + Member of the Audit and Human Resources Committees.
- **Tools & Metals...** private distributor... past Independent Director + Member of the Audit and Compensation Committees.
- **Air Logistics Corp...** private manufacturer... past Independent Director.
- **Association for Supply Chain Management (ASCM)...** world's largest not-for-profit professional association for supply chain professionals (previously known as APICS) ... Past Chair of the Board – 2015, Chair Elect – 2014, Board Member – 2012 thru 2013. Also served in the Orange County ASCM Chapter as President in 1983 & 1984.
- **Society of Cost Management...** not-for-profit professional association... past Independent Director.

Mr. Dunn holds a BA degree in business management from **California State University in Fullerton**. He is also qualified by **ASCM** as a **Certified Practitioner in Inventory & Production Management (CPIM)**. Mr. Dunn remains an active and engaged professional member of **ASCM**, the **Society for Human Resource Management (SHRM)** and the **National Council of Corporate Directors (NACD)**. Alan is a recipient of NACD's "2007 Board Member of the Year" award.

## About GDI Consulting & Training Company

**GDI Consulting & Training (GDI)** provides practical solutions to complex business and managerial problems in manufacturing and related industries. Our firm has successfully assisted clients around the world for more than 35 years, having performed more than 175 projects in over 110 companies in 21 countries. GDI applies specialized and common sense solutions... *not overly-intellectualized approaches...* to numerous types of challenging client problems in manufacturing and distribution industries, including:

- **Factory & distribution center layout & design**
- **Factory & distribution information systems implementation**
- **Cost management systems**
- **Quality management systems design & implementations**
- **Core business process re-engineering**
- **Information systems data integrity & reliability improvements**
- **Enterprise performance metrics & compensation systems**
- **Organization design & improvement**
- **Business strategy formulation**
- **Complex problem solving**

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## About GDI's Talent Acquisition Practice

### **GDI** Talent Acquisition Practice

Specify | Source | Evaluate | Profile | Engage | Onboard

Leadership, management and technical staff requirements continually evolve, but the need for high-performing talent remains constant. Recruiting top-talent into any manufacturing or distribution company requires a rigorous methodology. It begins with a thorough understanding of the position and continues through a detailed vetting and structured evaluation process that determines each Candidate's *real* abilities and *real* potential to succeed.

Using proven assessment and evaluation processes, GDI's Talent Acquisition Practice specializes in matching the best Candidates with each position we are engaged to fill. We have 35 years of relationships with high-performing manufacturing and distribution industry talent, giving us unparalleled capabilities to fill almost any management and technical position within these industries. Our clients value our deep industry expertise, valuable insights, rigorous Candidate evaluation methodologies and commitment to the success of both clients and Candidates.



[www.gditalent.com](http://www.gditalent.com)

## About GDI's Supplier Assessment Practice

### **GDI** Supplier Assessment Practice



GDI's comprehensive *Supplier Assessment Practice* utilizes a structured fact-based methodology that clinically assesses the performance of your company's significant materials Suppliers by quantifying up to 19 categories of risks that may directly impact your company's performance.

[www.gdisupply.com](http://www.gdisupply.com)



- Fact-Based, Proven & Tested Methodology
- Execute in 3 Weeks With Up To 3 Trained Assessors
- Execute Any Where In the World
- Quantifies 19 Specific Areas of Risk
- Results in Terms & Condition Mandates
- Provides an Improvement Path For the Supplier
- Modeled After Operational Due-Diligence From the M&A World

## About GDI's Owner & Investor Services Practice



[www.gdiinvest.com](http://www.gdiinvest.com)

Working in concert with other GDI practices, GDI's Owner & Investor Services Practice focuses on **THREE** specific professional services:

<b>Governance</b>	Assisting public and private manufacturing and distribution companies to establish, strengthen and reconfigure Boards of Directors and various Board committees. We also sit on Boards of Directors, always bringing strong global operational and economic perspectives to the governance process.
<b>Operational Due-Diligence</b>	Normally working for an acquirer, we often execute comprehensive operational analyses both pre and post-acquisition. Many of our operational due-diligence assignments have resulted in significant changes in the acquisition scope, price and terms.
<b>Valuation Enhancement</b>	Helping clients to understand <u>precisely</u> how to increase enterprise valuation by defining specific ways to generate more cash from a company's suite of gross assets is what we do best. Often, we utilize our analytics to support capital raising and recapitalization activities.

We have completed numerous projects for private equity investors, individual investors, business owners, corporations and activist shareholders.

## About the Manufacturing Executive Institute (MEI)

The Manufacturing Executive Institute (MEI) is a training and publishing organization dedicated to bringing relevant knowledge to individuals who are interested in making dramatic performance improvements in their manufacturing and distribution companies.

MEI delivers knowledge to these communities in FOUR distinct ways:

- **Live Training Workshops...** includes several scheduled and focused training series, and custom designed and scheduled training programs at a client company's site.
- **E-Learning Training Programs...** includes several regularly scheduled e-learning series and periodic special web-enabled training programs. All of these programs are produced by MEI's state of the art e-learning studio, "Radio MEI."
- **Publications...** includes books, white-papers, archived e-learning programs & other information of interest to the manufacturing and distribution communities. Also includes access to the "MEI Bookstore" containing all of the most important manufacturing & distribution industry books for sale.
- **Manufacturing & Distribution Focused Research...** MEI conducts and supports ongoing research to extend the body-of-knowledge in various manufacturing and distribution disciplines. These research projects result in valuable reports and presentations that are routinely shared with these communities.

To learn more about the Manufacturing Executive Institute, it's mission and additional programs, call (951) 736-2114 or visit us on the web at [www.mfgexecutive.com](http://www.mfgexecutive.com).





## SIX LIVE Workshop Series

Workshop Series	Series Information
<i>"Practical Capital Series"</i>	Numerous 1-day LIVE workshops designed to provide SPECIFIC and PRACTICAL techniques that focus participants on the mastery of management and technical skills that will lead to improved working capital results. Cost-of-Goods-Sold reductions, operating expense reductions, inventory reductions, accounts receivables collection improvements and supplier payment improvements are a few topic this training series addresses.
<i>"Supply / Demand Management School Series"</i>	Numerous 1-day LIVE workshops designed to provide SPECIFIC and PRACTICAL techniques that focus on how to balance supply and demand through improved forms of master production scheduling, sales forecasting and supply/demand reconciliations.
<i>"LEAN Tools Series"</i>	Numerous 1-day LIVE workshops designed to provide hands-on training in the application of LEAN manufacturing, distribution and infrastructure improvement tools.
<i>"Professional Governance Series"</i>	Four separate 1-day LIVE workshops designed to provide ongoing governance related topics of interest to members of private company Boards of Directors, Owners, Senior Executives and professionals who serve Boards of Directors.
<i>"Project &amp; Change Management Series"</i>	MEI and our skilled alliance partners provide a full compliment of LIVE project management training. This training is offered in several formats including fundamentals, role-playing and project simulation formats. Each single and multi-day workshop is specifically designed to provide participants with the <i>exact</i> knowledge needed to successfully initiate, plan, organize, control and complete projects.
<i>"Special Series"</i>	Numerous 1-day and multi-day LIVE workshops that focus on implementation requirements within a specific manufacturing or distribution body-of-knowledge area. Many of these programs are repeated one or more times each year.
MEI can deliver any of the programs in this training series on-site, saving your company substantial participant travel expenses when groups of employees require similar training.	

## About MEI's *"Practical Capital Series"* 1-Day Workshops

MEI's *"Practical Capital Series"* Workshops are designed to:

- Provide SPECIFIC and PRACTICAL capital improvement techniques.
- Focus participants on the mastery of management and technical skills that impact or drive capital
- Lead to improved working capital results... quickly.

Cost-of-Goods-Sold reductions, operating expense reductions, inventory reductions, accounts receivables collection improvements and supplier payment improvements are a few topic areas in this training series.

Participants learn relevant and immediately useful skills at a reasonable price without losing valuable time from work.





## About MEI's **"Supply / Demand Management School Series"** 1-Day Workshops

MEI's **"Supply / Demand Management School Series"** Workshops are designed to provide SPECIFIC and PRACTICAL techniques that focus on how to balance supply and demand through improved forms of master production scheduling, sales forecasting and supply/demand reconciliations.



Demand Planners, Master Production Schedulers, Sales Managers, Marketing Managers and operations management professionals will find knowledge from this series helpful as they work to manage customer demands and factory supply.

## About MEI's **"LEAN Tools Series"** 1-Day Workshops

MEI's **"LEAN Tools Series"** Workshops are designed to provide hands-on training in the application of LEAN manufacturing, distribution and infrastructure improvement tools.

KanBan techniques, Kaizen methods, Value Stream Mapping, 5S methods, policy deployment, aligned performance metrics, standardized work, Poka-Yoke methods, work simplification techniques, Six Sigma, "Autonomation," SMED, Cost-of-Quality analysis, Taguchi methods and more are included in these programs. Participants learn relevant and immediately useful skills that can be applied to waste elimination, process improvement and cost reduction initiatives.



## About MEI's *"Professional Governance Series"* 1-Day Workshops



MEI's *"Professional Governance Series"* Workshops are designed to provide ongoing governance related topics of interest to members of private company Boards of Directors, Owners, Senior Executives and professionals who serve Boards of Directors.

Topics explored include risk management, Director selection, Board organization issues, committee structures, governance principles, Board reporting requirements, interface with management, Director duty-of-care obligations, Management compensation structure and oversight, individual Director conduct, shareholder reporting, Director compensation, Board transparency and Board of Directors conduct and ethical considerations.

Participants learn relevant and immediately useful information from the instructors and have ample opportunity to interact with other participants.

## About MEI's *"Project & Change Management Series"* Workshops

MEI and our skilled alliance partners, provide a full complement of project management training. This training is offered in several formats including fundamentals, role-playing and project simulation formats. Each single and multi-day workshop is specifically designed to provide participants with the *exact* knowledge needed to successfully initiate, plan, organize, control and complete projects. Professionals who have attended one or more of our suite of *"Project & Change Management Series"* Workshops have learned everything needed to successfully execute both simple and complex projects.

Technical, organizational, cultural and behavioral impediments to successful and rapid deployment of project and human change management techniques are addressed in each of our programs so that participants can implement what they learn. Come to these workshops ready to learn techniques you can apply on the job the following week.



## About MEI's *"Special Series"* Workshops

MEI offers a number of "special" live programs that include a wide range of topics and are often repeated one or more times each year. These programs are regularly updated and new programs are periodically added. Current programs include:

- **Implementing Activity Based Cost Accounting (ABCA) & Leadership...** a complete implementation-focused 2-day program, complete with all tools, techniques, plans and templates necessary to implement and effectively use ABCA.
- **Supplier Process Engineering Fundamentals...** a comprehensive 2-day program that describes, in detail, how the new Supplier Process Engineer performs his/her duties in a global supply chain world. This program is also offered in a "Virtual Classroom" format.
- **Building a Winning Global Sourcing Strategy...** a thorough 2-day training program that teaches procurement professionals how to build processes for sourcing the right quality supply at the lowest total cost from anywhere in the world.
- **Designing & Implementing Global Business Strategies...** a comprehensive 2-day overview course that teaches new global managers how to globally design product, manufacture product, source components and service customers in the global business world. This program is also offered in a "Virtual Classroom" format.
- **Implementing Business Process Innovations...** a 2-day, exercise and case-study driven training program that challenges conventional thinking in all functions within a manufacturing company.
- **Implementing 5S In Your Factory...** a 1.5 day program that presents tools, techniques and examples for the manager who plans to implement 5S techniques in a factory environment.
- **Implementing Operator-Driven Statistical Process Control (SPC)...** a complete 2-day workshop that teaches operators and managers how to implement and use SPC to dramatically improve manufacturing quality with little additional assistance from the QA organization.
- **Symphonic Manufacturing™ – A Manufacturing Enterprise "Boot Camp"...** a course like no other course you have ever attended. Participants produce actual products and redesign a physical factory over a 5 intense day period. Each day simulates a fiscal quarter and all improvements from day-to-day are valued. At the conclusion of each day, participants are informed of the change in shareholder value that resulted from the changes they implemented in their factory.

## TEN E-Learning Series Offered by MEI

E-Learning Series	Type	Price	Series Information
"Global Supply Chain Improvements Series"	Live + On-Demand, Non-Interactive, 60-minutes	Free!	Each monthly program in the "Global Supply Chain Improvements" e-learning series addresses one or more SPECIFIC issues facing SUPPLY CHAIN professionals in the manufacturing and distribution industries. Participants learn how to solve difficult issues and learn how to implement solutions to perplexing problems.
"Global Manufacturing Enterprise Series"	Live + On-Demand, Non-Interactive, 60-minutes	Free!	Each e-learning program in the "Global Manufacturing Enterprise Series" addresses one or more SPECIFIC issues facing global manufacturing companies. To provide a range of topics that are useful to all professionals working in different types of global manufacturing companies, these e-learning sessions address specific topics in global R&D, sourcing, manufacturing, selling, distribution and customer service.
"BIG-Issues Series"	Live + On-Demand, Non-Interactive, 60-minutes	Free!	This e-learning series addresses the big manufacturing and distribution industry issues of the day, from "Cap & Trade" to capital investment and tax issues.
"Special Series"	Live + On-Demand, Non-Interactive, 60-minutes	Free!	These special e-learning training programs often include guest presenters who are recognized industry leaders. Programs cover a wide range of manufacturing and distribution topics, and are often suggested by past participants.
"Talent Acquisition Speed-E-Lesson Series"	On-Demand, Non-Interactive, 10-20 minutes	Free!	These e-learning sessions are designed as a series that together, describe GDI's Talent Acquisition Practice methodology in a way that will cause anyone interested in recruiting to rethink everything they have learned.
"Professional Governance Series"	Live + On-Demand, Non-Interactive, 90-minutes	\$59.00	Designed for senior executives and members of Boards of Directors, these e-learning programs address issues of importance in the C-Suite and in the Board room.
"Modem Chat Series"	Live & Interactive, 90-minutes	\$59.00	These LIVE e-learning programs are fully INTERACTIVE, allowing instructor AND participants to talk and be heard by all participants. Instructors and participants have full visual access to teaching materials as well as interactive audio among themselves. These "virtual" e-learning programs are designed to address difficult to solve problems that manufacturing and distribution professionals face daily.
"Beyond the Basics Series"	On-Demand, Non-Interactive, 60-minutes	\$59.00	MEI's "Beyond the Basics Series" of fee-based and on-demand, e-learning programs present manufacturing industry topics that are more advanced, and in some respects, even provocative. Topics presented in this series are chosen with an expectation that the learner will share the training information with others, to drive implementation of innovation and best-practices. Simply stated, presentations in the "Beyond the Basics Series" are designed to initiate change.
"Navigating the Global Supply Chain Series"	On-Demand, Non-Interactive, 10-minutes	\$1.99	These on-demand e-learning sessions provide a serious AND humorous adjunct learning experience to the APICS certification body-of-knowledge. 10 minutes in length, these programs bring to the learning process some wisdom from long-serving industry, consulting and education professionals. You will learn while at the same time being engaged in a semi-humorous approach to each subject.
Multi-Session Interactive "Virtual Classroom Series"	Blended Live, Interactive & On-Demand	Varies	Our "Virtual Classroom Series" workshops are periodically scheduled e-learning programs that cover a substantial amount of information within the target body-of-knowledge. Each "Virtual Classroom" workshop provides instruction over multiple sessions, mixing and blending training modalities. These "Virtual Classroom" programs are designed to address large subjects that would often be presented in multi-day workshops.

For more information & to register for future programs, go to: [www.mfgexecutive.com](http://www.mfgexecutive.com)

## About MEI's *"Global Supply Chain Improvement Series"* Monthly FREE E-Learning Programs



Learn

Each monthly *"Global Supply Chain Improvement Series"* e-learning program address one or more SPECIFIC issues facing global SUPPLY CHAIN professionals in the manufacturing and distribution industries. Participants learn how to solve difficult operations issues and learn how to implement solutions to perplexing problems... all from the comfort of their office or home computer!

To provide a range of topics that are useful to all professionals working in the various disciplines of supply chain management, these monthly e-learning programs are divided into NINE *"themed"* categories:

**Planning**

**Sourcing**

**Converting**

**Delivering**

**Returning**

**Inventory Management**

**Enabling Supply Chains**

**Supply Chain Economics**

**Managing & Leading Supply Chains**

Participants can submit questions during these live e-learning programs. The instructor will allow approximately 5 to 10 minutes at the conclusion of each program to answer these questions.



All programs in this series are produced and broadcast LIVE from MEI's webcast studio (*"Radio MEI"*) located in Corona, California.

Won't you set aside some time each month to participate in these FREE *"Global Supply Chain Improvement Series"* e-learning programs?

## About MEI's *"Global Manufacturing Enterprise Series"* FREE E-Learning Programs

These e-learning programs are an ongoing series of instructor-led LIVE 60-minute programs, produced and broadcast from MEI's e-learning studio (*"Radio MEI"*) located in Corona, California.

Each e-learning program in this series addresses one or more SPECIFIC issues facing global manufacturing companies. Participants learn how to solve difficult global business management problems and learn how to implement solutions... all from the comfort of their computer! Participants can submit questions during these live e-learning sessions. The instructors will allow approximately 5 - 10 minutes at the conclusion of each program to answer questions.

To provide a range of topics that are useful to all professionals working in different types of global manufacturing companies, these e-learning programs are divided into SIX *"themed"* categories:

**Global Manufacturing**

**Global R&D and Engineering**

**Global Risk Management**

**Global Selling & Distributing**

**Global Serving & Servicing**

**Global Sourcing**

Participants can submit questions during these live e-learning programs. The instructor will allow approximately 5 to 10 minutes at the conclusion of each program to answer these questions.

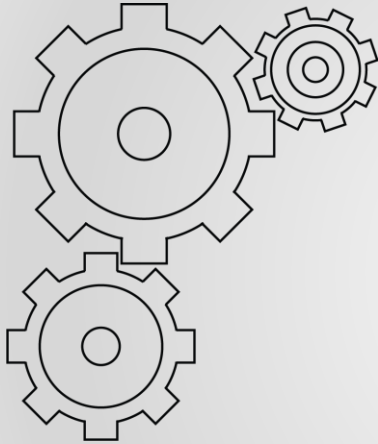
All programs in this series are produced and broadcast LIVE from MEI's webcast studio (*"Radio MEI"*) located in Corona, California.



Won't you set aside some of your time to attend these periodically scheduled FREE *"Global Manufacturing Enterprise Series"* e-learning programs?



## About MEI's **"BIG-Issues Series"** FREE E-Learning Programs



These LIVE e-learning programs address the BIG manufacturing and distribution industry issues of the day. Past programs have included:

- How Cap & Trade Will Impact Manufacturing Companies
- How the Manufacturing Industry Can Save the North American Economy
- Petroleum's Impact on Global Logistics Costs
- How Manufacturing Creates So Many Secondary Jobs
- Innovations in Global Supply Chain Management

These FREE e-learning programs often include guest presenters who are recognized industry leaders. All programs in this series are produced and broadcast LIVE from MEI's webcast studio ("**Radio MEI**") located in Corona, California.



Won't you set aside some of your time to attend these periodically scheduled FREE **"BIG-Issues Series"** e-learning programs?

## About MEI's **"Special Series"** FREE E-Learning Programs

Each FREE e-learning program in MEI's **"Special Series"** addresses one or more SPECIFIC issues facing professionals in the manufacturing and distribution industries. Participants learn how to solve difficult issues across a broad range of topics, and learn how to implement solutions to perplexing problems... all from the comfort of their office and home computers!

These special FREE 60-minute LIVE e-learning programs often include guest presenters who are recognized industry leaders. Participants can submit questions during these LIVE programs. The presenters will allow approximately 5 - 10 minutes at the conclusion of each program to answer questions.

To provide a range of topics that are useful to all supply chain professionals, these e-learning programs are divided into FOUR **"themed"** categories:

**Supply Chain Best Practices**  
**Industry Issues**

**Economics & Finance**  
**Supply Chain Leadership**

Participants can submit questions during these live e-learning programs. The instructor will allow approximately 5 to 10 minutes at the conclusion of each program to answer these questions.

All programs in this series are produced and broadcast LIVE from MEI's webcast studio ("**Radio MEI**") located in Corona, California.



Won't you periodically set aside 60-minutes to attend these special & informative FREE e-learning programs?





## About GDI Talent Acquisition Practice's *"Speed-E-Lesson Series"* On-Demand E-Learning Programs



These e-learning programs are LIVE, instructor-led learning experiences. Each session is designed as an element in a continuing series that together, describe GDI's Talent Acquisition Practice methodology in a way that will cause anyone interested in recruiting to rethink everything they have previously learned about this subject. Beginning with an explanation of GDI's talent acquisition framework, these programs provide all the information necessary to begin reshaping your company's recruiting and talent acquisitions processes. Each session addresses one or more elements in the talent acquisition process... from competency model development, through various forms of progressive interviewing techniques, and ending in methods for factually evaluating and comparing candidates.

**GDI** Talent Acquisition Practice  
Specify | Source | Evaluate | Profile | Engage | Onboard

Won't you set aside some of your time to attend these periodically scheduled FREE *"Speed-E-Lesson Series"* e-learning programs?

## About MEI's *"Professional Governance Series"* E-Learning Programs



These e-learning programs are LIVE, instructor-led 60-minute learning experiences. **These programs are designed to provide ongoing governance related topics of interest to members of private company Boards of Directors, Owners, Senior Executives and professionals who serve Boards of Directors.** Topics explored include risk management, Director selection, Board organization issues, committee structures, governance principles, Board reporting requirements, interface with management, Director duty-of-care obligations, Management compensation structure and oversight, individual Director conduct, shareholder reporting, Director compensation, Board transparency and Board of Directors conduct and ethical considerations.

Participants learn relevant and immediately useful information from the instructors and have ample opportunity to interact with other participants.

 **MANUFACTURING  
EXECUTIVE INSTITUTE**  
[www.mfgexecutive.com](http://www.mfgexecutive.com)

Won't you periodically set aside 60-minutes once a quarter to attend these special & informative governance e-learning programs?

## About MEI's *"Modem Chat Series"* Interactive E-Learning Programs

These fee-based LIVE e-learning programs are fully INTERACTIVE, allowing instructor AND participants to talk and be heard by all participants. Instructors and participants have full visual access to teaching materials as well as interactive audio among themselves. Participation is limited to 25 individuals.

All *"Modem Chat Series"* interactive e-learning programs are coordinated live from MEI's webcasting studio, *"Radio MEI,"* located in Corona, California. These 90-minute LIVE *"virtual"* training programs are designed to address difficult to solve problems that manufacturing and distribution professionals face daily. Topics are periodically chosen that lend themselves to a group training model that relies as much on the participants as the on the lead instructors.

To provide a range of topics that are useful to all supply chain professionals, these interactive e-learning programs are divided into FOUR *"themed"* categories:

**Efficiency & Effectiveness**

**Supply Chain Metrics**

**Supply Chain Leadership**

**Performance Economics**

All programs in this series are produced and broadcast LIVE from MEI's webcast studio (*"Radio MEI"*) located in Corona, California.



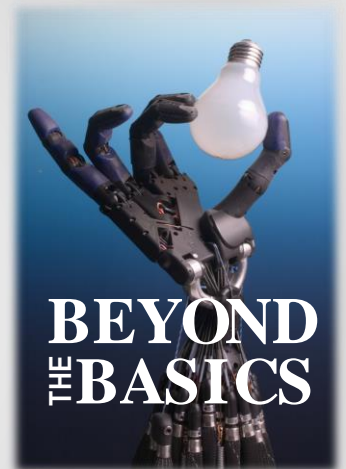
Won't you periodically set aside 90 minutes to participate with your industry peers in these highly interactive *"Modem Chat Series"* e-learning programs?



## About MEI's *"Beyond-the-Basics Series"* On-Demand E-Learning Programs

These fee-based and on-demand e-learning programs present manufacturing industry topics that are more advanced, and in some respects, even provocative. Topics presented in this series are chosen with an **expectation that the learner will share the training information with others, to drive implementation of innovation and best-practices**. Simply stated, presentations in the *"Beyond the Basics Series"* are **designed to initiate change**.

Using advanced production and communications techniques, these high-production value e-learning programs are designed like no other training instruments available today. More like a *"movie with a purpose"* than a typical web-training session; cutting-edge content and passionate presenters are carefully chosen, scripted and produced to facilitate maximum learning in a minimal amount of time. All programs are pre-recorded and are available to subscribers 24 hours a day.



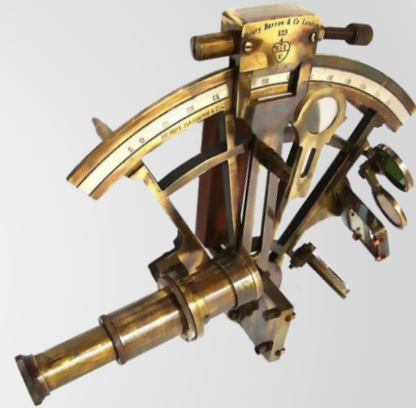
Won't you periodically set aside 60-minutes to download & view these on-demand e-learning programs?



## About MEI's *"Navigating the Global Supply Chain Series"* On-Demand E-Learning Programs

MEI's *"Navigating the Global Supply Chain Series"* of fee-based, on-demand e-learning programs provide a serious AND humorous adjunct learning experience to the APICS certification body-of-knowledge. 10 to 20 minutes in length, these programs bring to the learning process some wisdom from long-serving industry, consulting and education professionals. You will learn while at the same time being engaged in a real *"thinking"* program.

Each short video session builds on the previous session, yet each provide distinctive knowledge and *wisdom* on its own. If you want more wisdom on top of your APICS certifications, you would be *wise* to purchase, download and view these short lessons.



Won't you periodically set aside less than 20 minutes to download & view these *"wisdom-based"* on-demand e-learning programs?



## About MEI's Multi-Session Interactive *"Virtual Classroom Series"* E-Learning Workshops

MEI's *"Virtual Classroom Series"* e-learning workshops are periodically scheduled web-enabled, cohort-based programs that cover a substantial amount of information within the target body of knowledge. Each *"Virtual Classroom"* workshop provides instruction over multiple sessions, mixing and blending training modalities. A typical *"Virtual Classroom"* cohort training program might consist of:

- Multiple e-learning sessions scheduled over a 1 to 3 month period. Each training program can be between 5 and 20 sessions (of varying lengths) in duration.
- Advanced self-directed reading materials provided to participants through MEI's unique web-training portal.
- One or more LIVE e-learning programs, conducted at a predefined time. These LIVE e-learning sessions are fully INTERACTIVE, allowing instructor AND participants to talk and be heard by all participants. Instructors and participants have full visual access to teaching materials as well as interactive audio among themselves.
- Several on-demand e-learning videos to be viewed over the internet.
- Instructor *"Virtual Office Hours"* where participants can interact with the instructor in a virtual, web-based environment.
- *"Virtual Break-Out Sessions"* where participants can meet electronically in private working groups to solve a particular assignment or problem.
- *"Virtual Case-Studies"* that bring home real-life examples.
- Participant polls, quizzes, exercises, homework and session evaluations.



These *"Virtual Classroom"* e-learning programs are designed to address large bodies of knowledge that would often be presented in multi-day live workshops... but from the comfort of your home or office. All programs in this series are fee-based with group discounts available. Advance registration is required.

Won't you plan to attend these web-enabled multi-session *"Virtual Classroom Series"* e-learning workshops & learn an important subject without having to travel?

