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# **S&OP Implementation, Process, and Practice**

**John Boyer and Rick Fryda**  
October 2012

- **John E. Boyer, Jr., PE, CFPIM, is President of J. E. Boyer Company, a manufacturing education and consulting company founded in 1988. Additionally, his 39 years of manufacturing experience includes Rockwell International, Emerson Electric, and Weber State University. He has completed 41 S&OP projects in metal fabrication, electronics, automotive, sporting goods, and healthcare. John has a BS-IE from Lehigh University and an MBA from Utah State University. He is making his 25<sup>th</sup> APICS International Conference presentation.**

- **Rick has been in manufacturing for 31 years. He began his career in manufacturing on the shop floor. He progressed as New Products & Process Development Manager, Chief Production Officer, General Manager and Chief Operating Officer at Compco Industries before moving into his current position as President/CEO. Rick actively led the design and implementation of the S&OP process and currently leads the monthly activities.**

# Agenda



- **Introductions – 5**
- **S&OP Overview – 10 (John)**
- **S&OP Eight Process Steps – 10 (John)**
- **10 Implementation Steps – 10 (John)**
- **Compco Industries S&OP Story – 30 (Rick)**
- **Keys to Success – 5 (John)**
- **Wrap-up – 5 (John and Rick)**

**42 Slides**

**One idea that will  
help your S&OP  
process or  
implementation**

## Top Management's Handle on the Business

*It is the activity for effectively balancing demand and supply on a regular and formal basis.*

**Demand**

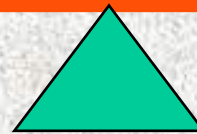


**Orders  
Forecast**

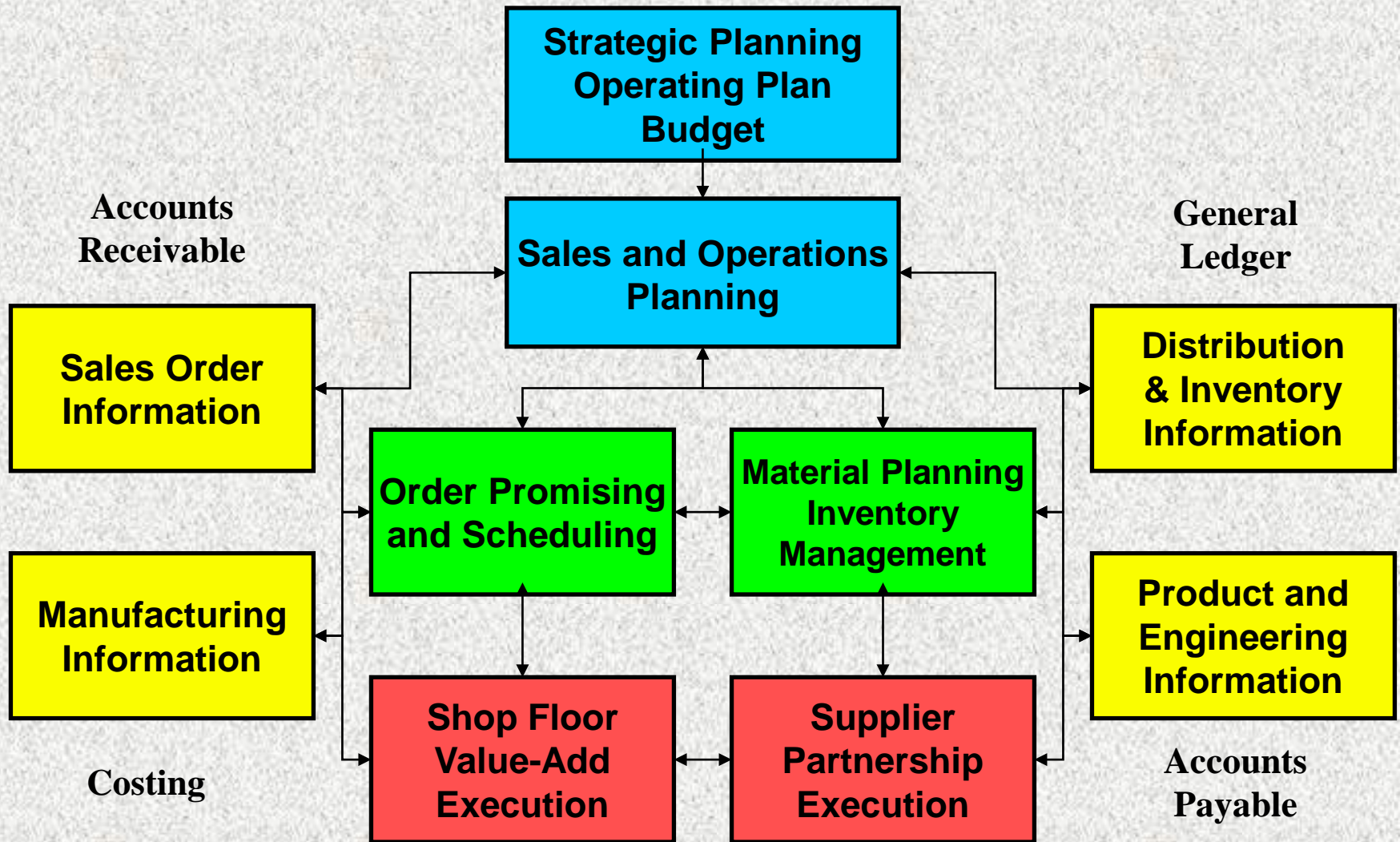
**Supply**



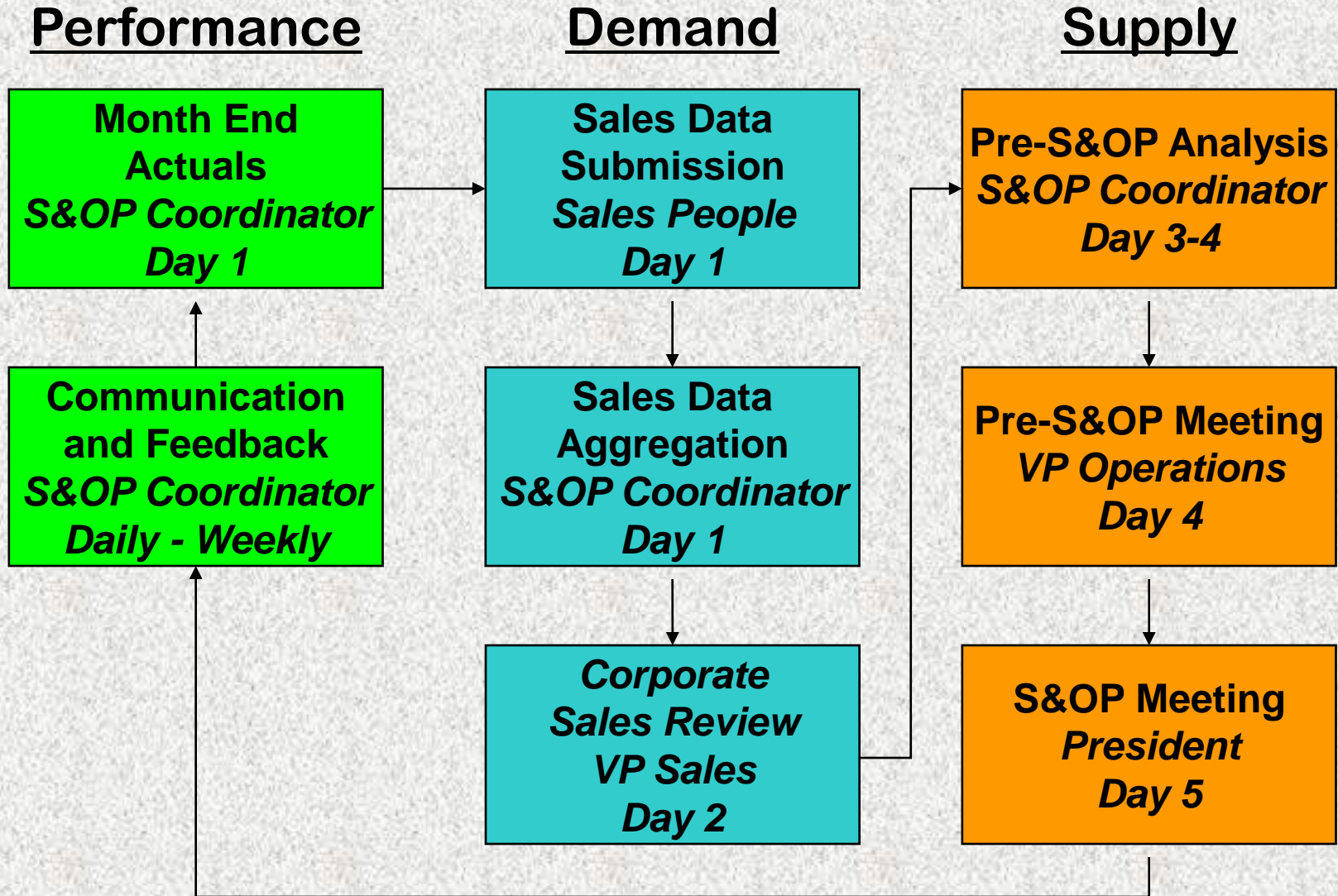
**Inventory  
Capacity**



# Business Enterprise Model



# S&OP Process Steps





# Questions for Everyone

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- **What did we say we were going to do (this month's forecast)?**
- **What did we do (month's actuals)?**
- **Why the difference (analysis)?**
- **What are we doing about it (action plan)?**
- **What are we doing moving forward (the updated forecast)?**

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Who is Doing the Asking?  
and  
Who is Being Asked?

**All Players** ■■■

**SHOW UP!**

**All Players** ■■■

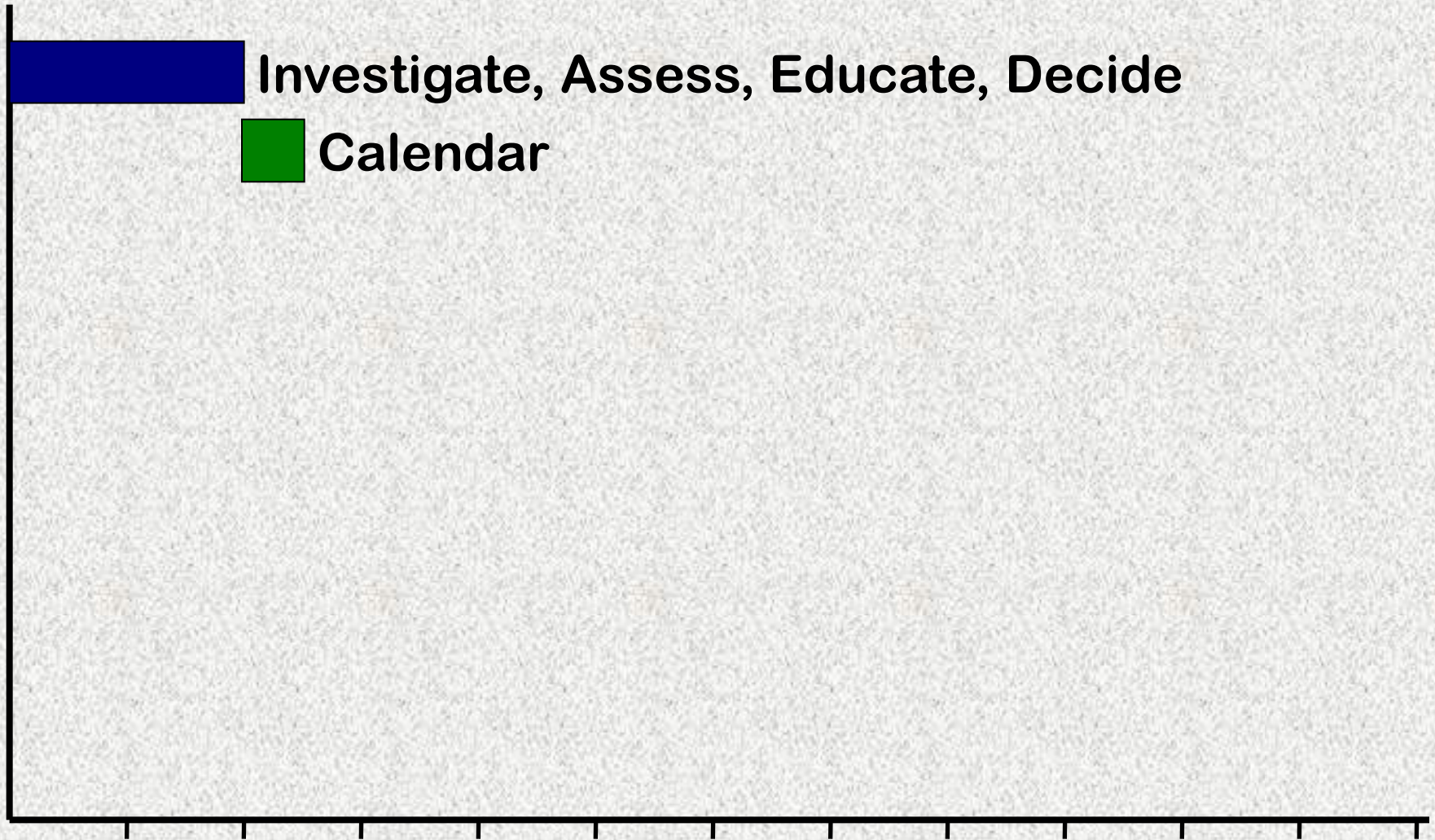
**LEARN IT!**

# The S&OP Coordinator



- **Responsible for providing data/information in a “fit-for-use” condition for the sales and operations planning process. Specific duties:**
  - **Ensure that all month-end actuals are collected.**
  - **Perform the Pre-S&OP analysis.**
  - **Conduct the Pre-S&OP meeting(s).**
  - **Coordinate the S&OP calendar.**
  - **Provide the S&OP meeting package.**
  - **Ensure that all players are trained in the S&OP process.**
- **Must have marvelous interpersonal skills, full command of the business system, detailed working knowledge of Excel, considerable knowledge of customers and products, and must know all of the players well.**
- **Should have an authority position reporting either to the president or a vice president.**

# S&OP Implementation Steps



# S&OP Calendar



<u>Period End</u>	<u>Wks</u>	<u>Period Actuals</u> <b>Joe Smith</b>	<u>Sales Data By Noon</u> <b>Jim Brown</b>	<u>Sales Review 1:00 - 3:00</u> <b>Jim Brown</b>	<u>Pre S&amp;OP 2:00 - 4:00</u> <b>John White</b>	<u>S&amp;OP Meeting 1:00 - 3:00</u> <b>Bob Jones</b>
31-Jan	5	3-Feb	3-Feb	4-Feb	6-Feb	7-Feb
28-Feb	4	3-Mar	3-Mar	4-Mar	6-Mar	7-Mar
28-Mar	4	31-Mar	31-Mar	1-Apr	3-Apr	4-Apr
2-May	5	5-May	5-May	6-May	8-May	9-May
30-May	4	2-Jun	2-Jun	3-Jun	5-Jun	6-Jun
27-Jun	4	30-Jun	30-Jun	1-Jul	3-Jul	7-Jul
1-Aug	4	1-Aug	1-Aug	5-Aug	7-Aug	8-Aug
29-Aug	4	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep
26-Sep	4	29-Sep	29-Sep	30-Sep	2-Oct	3-Oct
31-Oct	5	3-Nov	3-Nov	4-Nov	6-Nov	7-Nov
28-Nov	4	1-Dec	1-Dec	2-Dec	4-Dec	5-Dec
26-Dec	4	29-Dec	29-Dec	30-Dec	5-Jan	6-Jan

It Enables "Show Up"

<u>Demand Manager</u> <b>Joe Smith</b>	<u>Sales and Marketing</u> Sue Williams Jack Kemp Marvin Alred Wally Unseld Mary White <b>Jim Brown</b>	<u>Sales and Marketing</u> Sue Williams Jack Kemp Marvin Alred Wally Unseld Mary White Joe Smith <b>Jim Brown</b>	<u>Production and Materials</u> Wendy Ward Joe Vecheck <b>John White</b> Randy Urbana Sue Williams Joe Smith	<u>Top Management</u> <b>Bob Jones</b> John White Jim Brown Joe Smith Gary Pike Vince Winter
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# S&OP Implementation Steps



**Investigate, Assess, Educate, Decide**

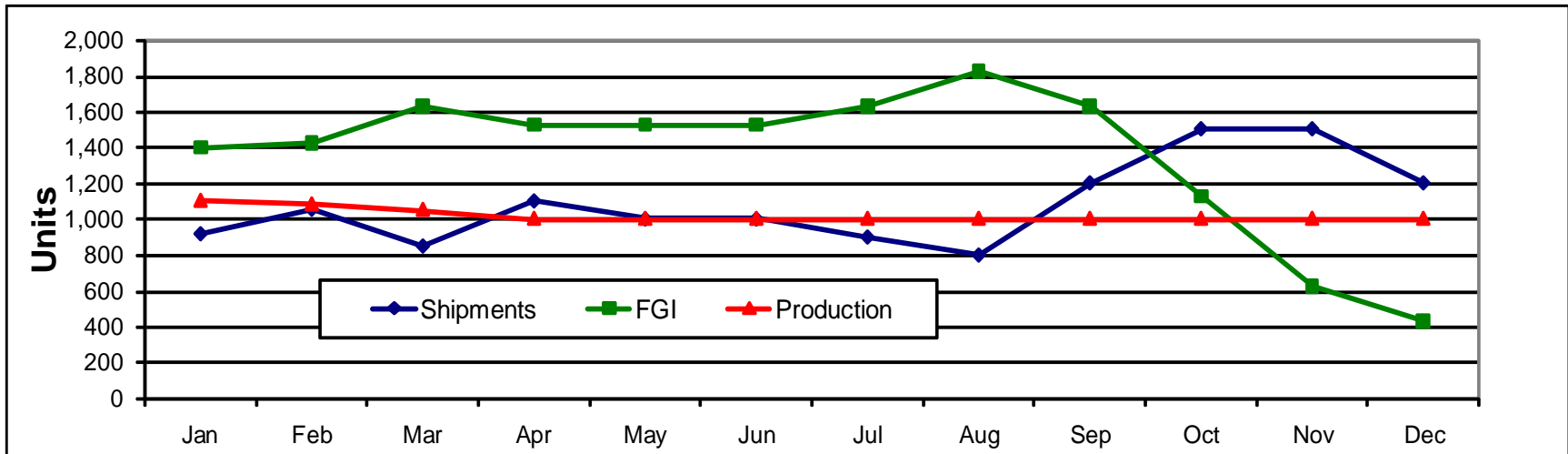
**Calendar**

**Format, Definitions, Tools, Data**

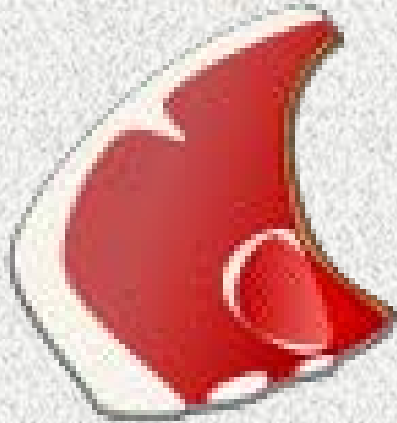


**Product C - S&OP - Any Company, Inc.**

		<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Bookings	Units	1050	900	825										
	Dollars	\$231,000	\$198,000	\$181,500										
Backlog	Units	400	246	221	200	21								
	Dollars	\$88,000	\$54,120	\$48,620	\$44,000	\$4,620								
Shipments	Units	918	1,054	850	1,100	1,000	1,000	900	800	1,200	1,500	1,500	1,200	13,022
	Dollars	\$201,960	\$231,880	\$187,000	\$240,000	\$220,000	\$220,000	\$198,000	\$176,000	\$264,000	\$330,000	\$330,000	\$264,000	\$2,862,840
	Bus Plan	\$200,000	\$200,000	\$200,000	\$250,000	\$250,000	\$250,000	\$200,000	\$200,000	\$300,000	\$300,000	\$300,000	\$300,000	\$2,950,000
FGI	Units	1400	1,426	1,626	1,526	1,526	1,526	1,626	1,826	1,626	1,126	626	426	
	CGS	\$224,000	\$228,160	\$260,160	\$244,160	\$244,160	\$244,160	\$260,160	\$292,160	\$260,160	\$180,160	\$100,160	\$68,160	
Production	Units	1,100	1,080	1,050	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,230
	Plant 1	600	580	600	600	600	600	600	600	600	600	600	600	
	Plant 2	400	400	450	400	400	400	400	400	400	400	400	400	
	Plant 3	100	100	0	0	0	0	0	0	0	0	0	0	



# Two Aspects to the Document



Steak



# Saels reVue



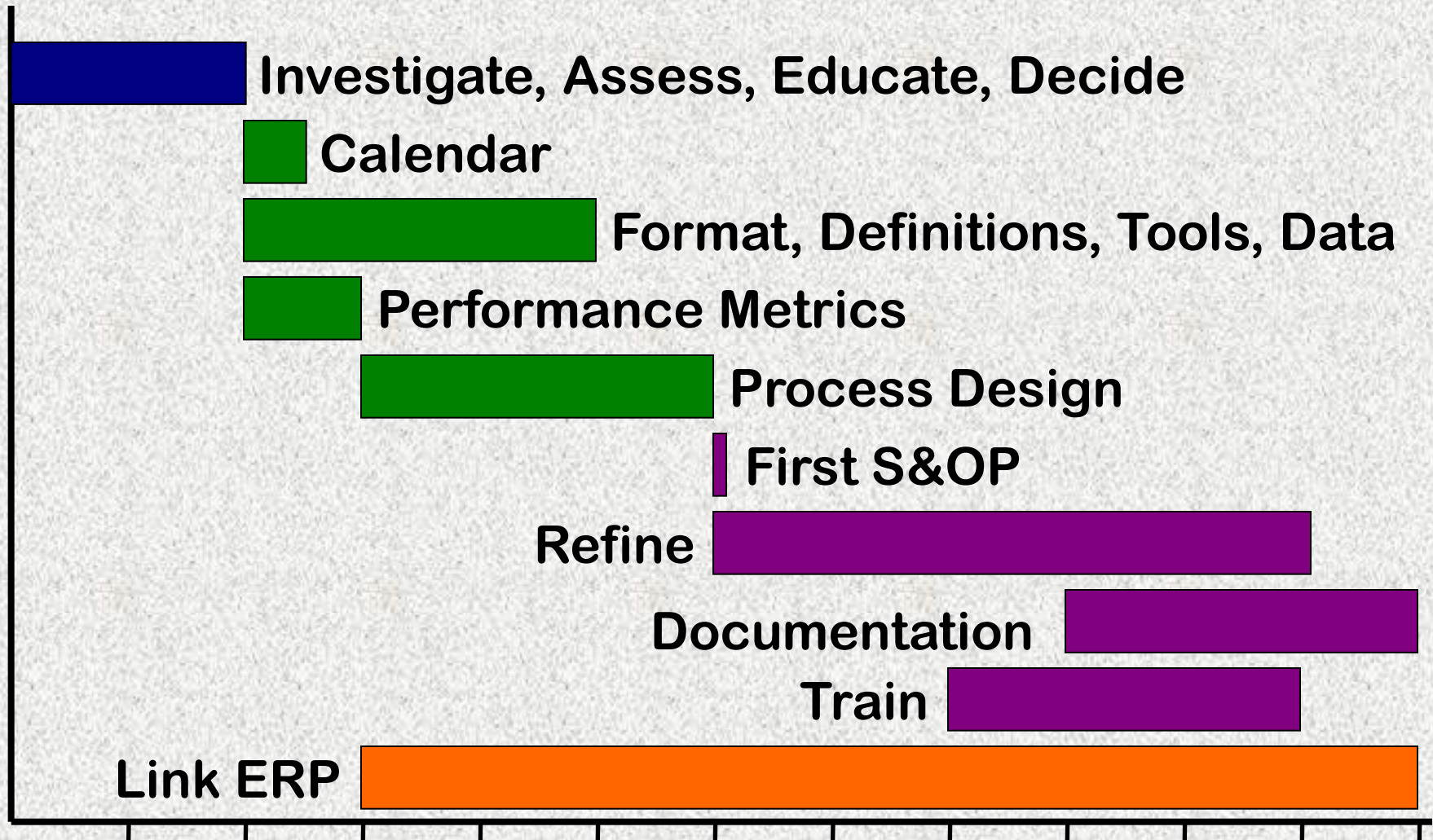
Sales	Q1	Q2	q3	Q4	Totle
Joe	320456	453857	537243	374854	1686410
Ralph	23954.00	73649.00	48594.00	38764.00	184961
Susan	635243	948373	374632	836434	2794682
Deb	63745	69685	48365	49865	231660
Total	1043398	1545564	1008834	1299917	4897713

# Sales Review



<u>Sales</u>	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>Total</u>
Joe	\$320,456	\$453,857	\$537,243	\$374,854	\$1,686,410
Ralph	\$23,954	\$73,649	\$48,594	\$38,764	\$184,961
Susan	\$635,243	\$948,373	\$374,632	\$836,434	\$2,794,682
<u>Deb</u>	<u>\$63,745</u>	<u>\$69,685</u>	<u>\$48,365</u>	<u>\$49,865</u>	<u>\$231,660</u>
Total	\$1,043,398	\$1,545,564	\$1,008,834	\$1,299,917	\$4,897,713

# S&OP Implementation Steps



# Linking S&OP to ERP



- **Fundamental questions?**
  - How is demand presented? Orders? Shipments? Production?
- **What time buckets will be used?**
  - S&OP is normally monthly.
  - The ERP system is normally daily.
- **How will shipments, production, and inventory be validated?**
  - In other words, the detail must match the aggregate!
  - This is done using “roll-ups” for sales, inventory, and production/supply.

# S&OP Implementation Steps



# Compco Industries



- **Founded in 1954.**
- **Family owned.**
- **116 People in Columbiana, Ohio.**
- **One of the nation's top suppliers of ASME, DOT and PED code as well as non-code tank heads and tank accessories.**
- **Primarily steel press operations for blanking, forming, and secondary operations.**
- **ISO 9001:2008 Certified.**



# Compco Products and Markets



- **Tank heads:**
  - 2” to 120”, 16 geometries, and 22 materials.
- **Primary markets:**
  - Propane, air receiver/compressor, water storage, cryogenic.
- **Combination of make-to-stock** (customer stocking programs and Tank Head Express) **and make-to-order:**
  - In 2011, produced 1815 different end items.
- **Coil steel is the primary raw material.**

# Tank Heads



# S&OP Journey

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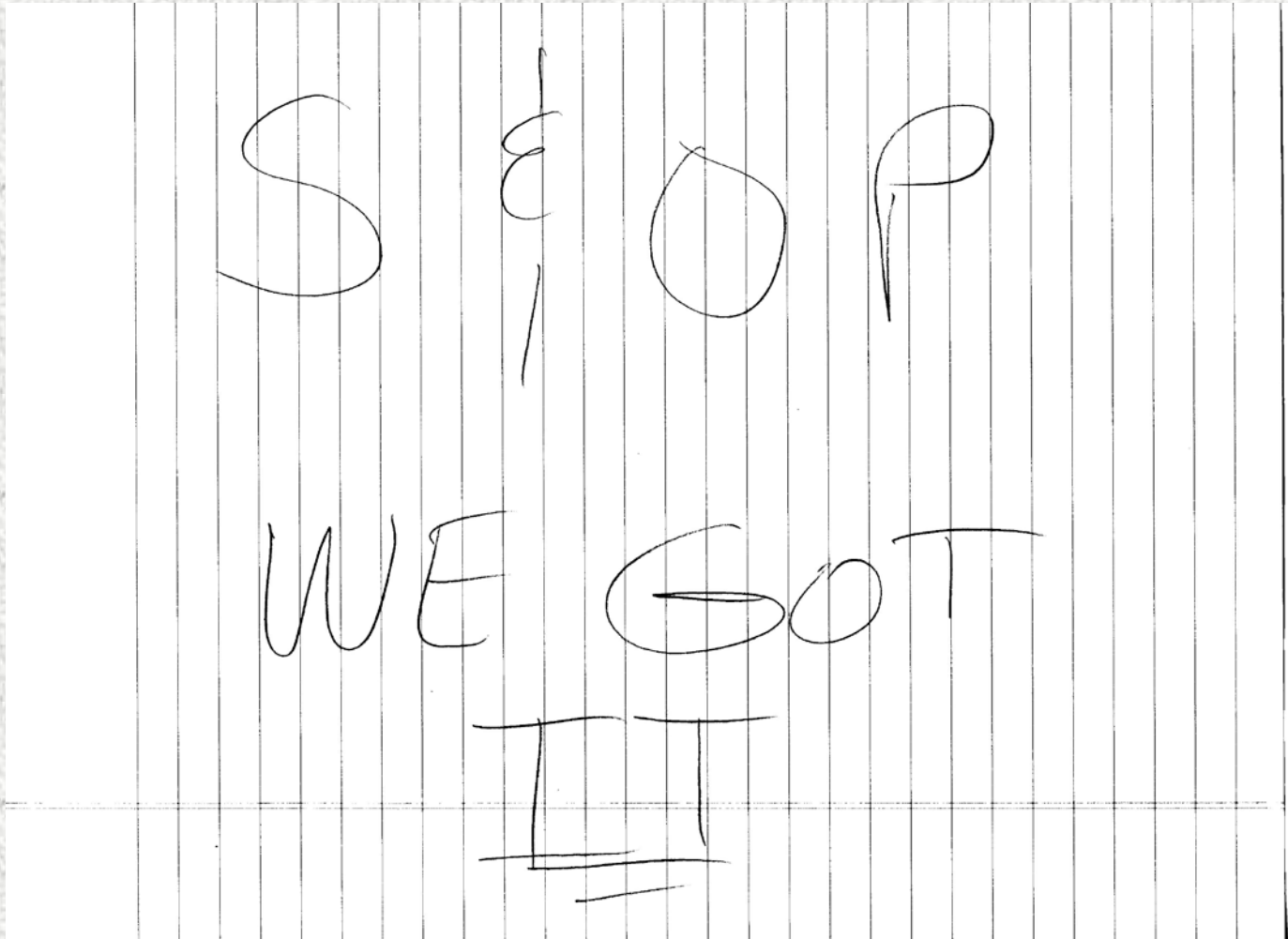
- **Started March 2003.**
- **No demand or supply management at all.**
- **Orders appeared and somehow were produced.**
- **Steel planning was based on tribal knowledge.**
- **Only few managers had ANY facts.**
- **There was no financial planning.**
- **There was no performance measurement.**

# Reasons for S&OP

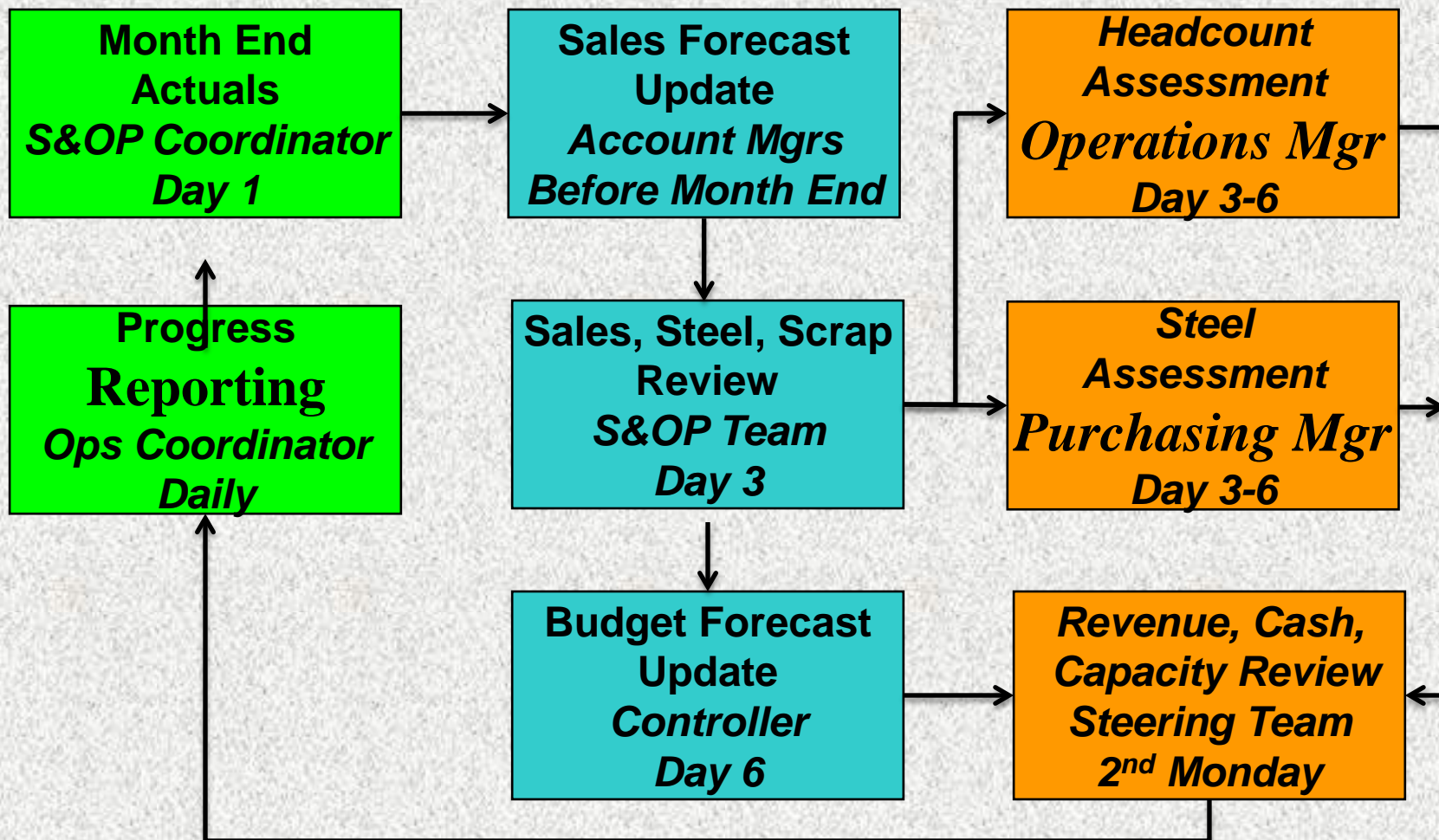


- **Very competitive marketplace:**
  - China enters tank head market in 2001.
- **Demanding customer expectations:**
  - We had to know our customers needs better than they did.
- **Complete, shared knowledge by many managers became necessary for making good decisions.**
- **Growing lead times made forward material and capacity planning a necessity:**
  - Raw material lead times went from 4 weeks to 12 weeks.
- **Financial planning had to derive from operations.**

# The Ah-Ha Moment



# The Process and Accountability



# The S&OP Document



- **One Excel spreadsheet (master):**
  - Data used in One Page Business Plan and ERP System.
- **All customer part number combinations (CPC).**
- **Top 85% of sales are forecast (about 350 CPCs).**
- **Three years of history, 12 months forward.**
- **Six sections:**
  - Units, price, dollars (Demand).
  - Steel weight, steel dollars, scrap dollars (Supply).
- **Monthly performance, steel pricing, summary.**

- **We now have one set of facts to run the business:**
  - **Data used in One Page Business Plan and ERP System.**
- **We are becoming a more proactive company every day which results in better decisions, sooner, by more people.**
- **And that results in lower cost and better customer service:**
  - **“Know your customers needs better than they do.”**



# Lessons Learned



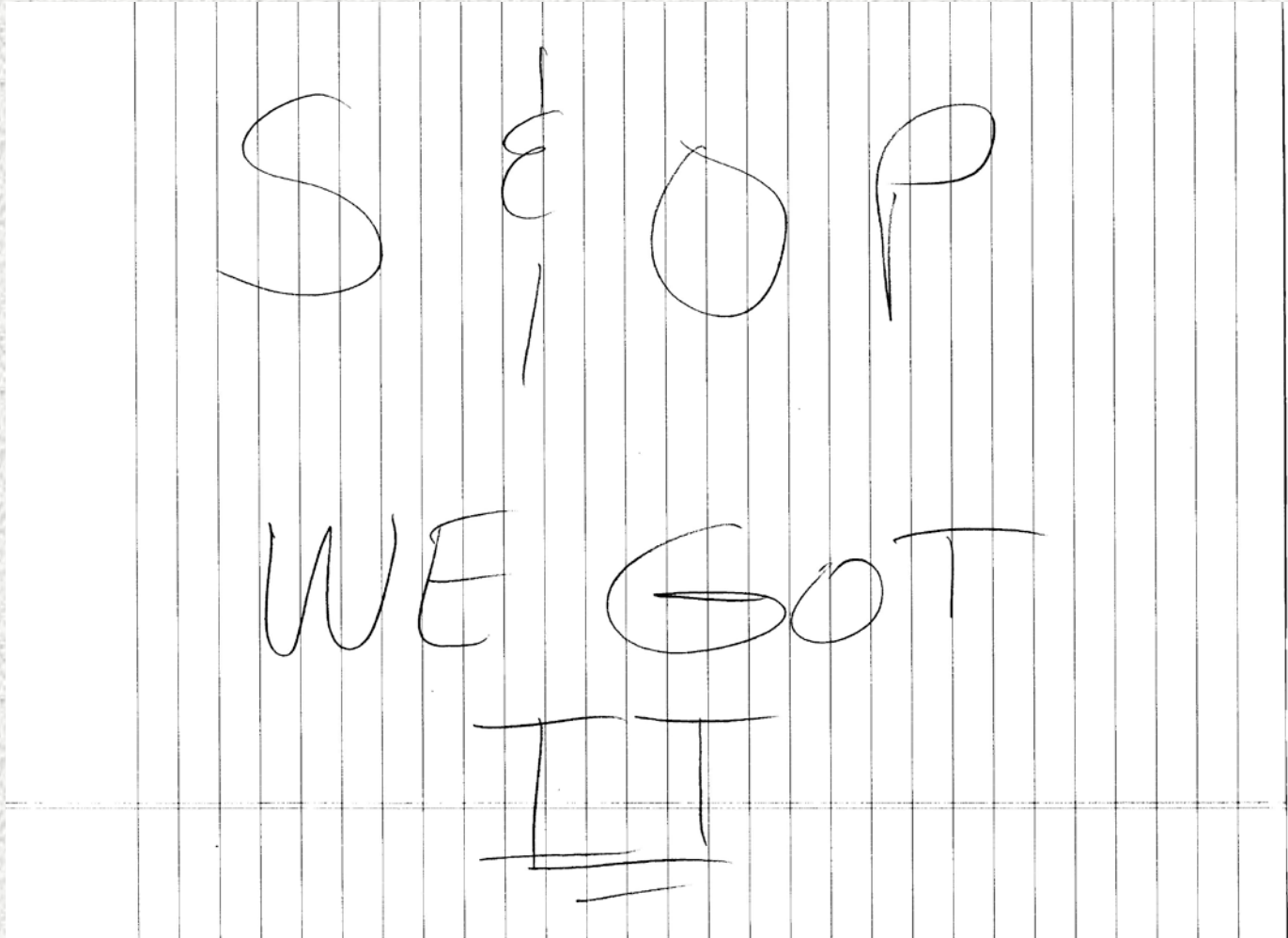
- It must be led and expected from the top:
  - Top Management must believe in S&OP.
- Insist on **PERFECT** data:
  - Engineer your ERP system to support it.
  - Use an S&OP Checklist.
  - Decisions are only as good as the data.
- Hold people accountable:
  - Process sustainability is important.
- Use it as **THE** tool for managing your business.

# Moving Forward



- We will continue to refine data, and will ultimately defeat data trauma!
- We will continue to drive accountability in all functional areas of the business.
- We will add the sales forecast to our ERP system to further systematize the process.
- No matter what ... we will have S&OP as our top management handle on the business!

# The Ah-Ha Moment

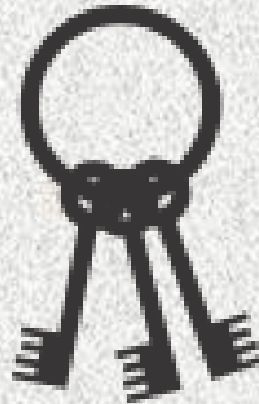




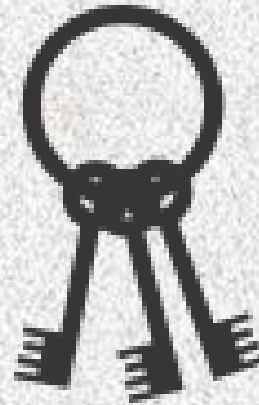
# Keys to Success

# Show Up

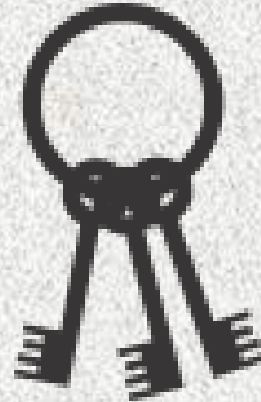
(Accountability)



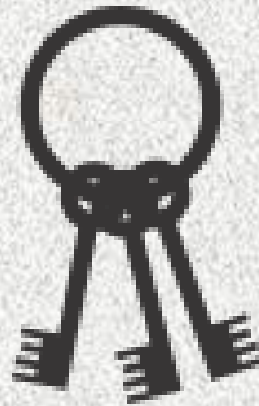
# Flawless Data



# One-Plan Process



# Top Management





# Watch Out For

- Constant **Deal** financial reporting.
- Multi-plan **Deal** financial reporting.
- Data trauma.
- Lack of **With** proper data.
- Attendance **With** financial reporting.
- Top management opting out.
- A million reasons **It** S&OP is a bad idea.



## Questions?

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