

# Value-Based Supply Chain Management

Prepared for: Mid-Florida Chapter

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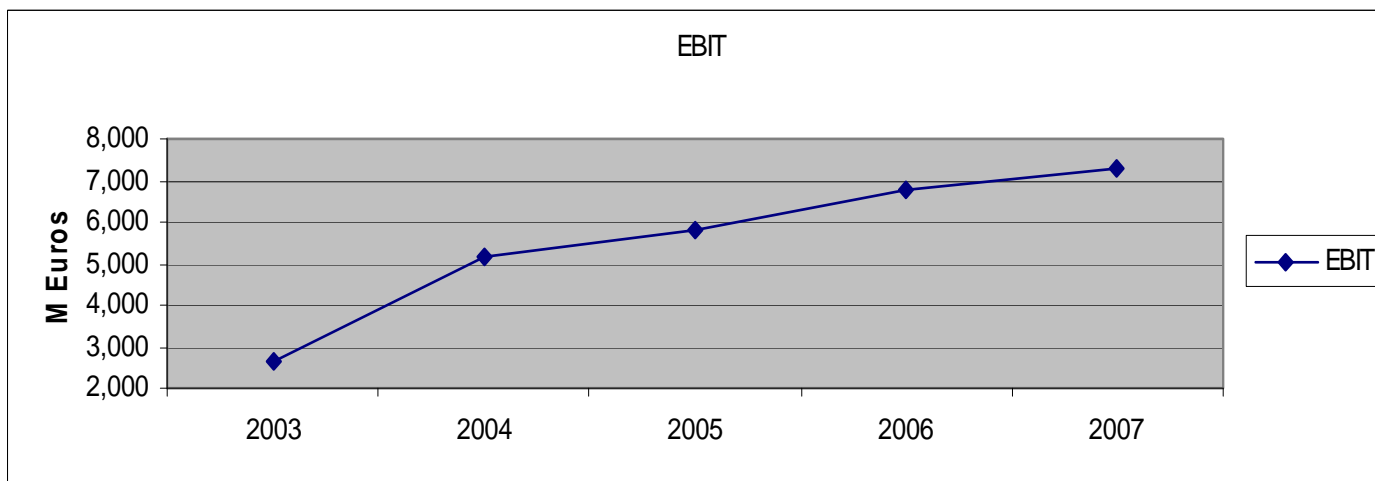
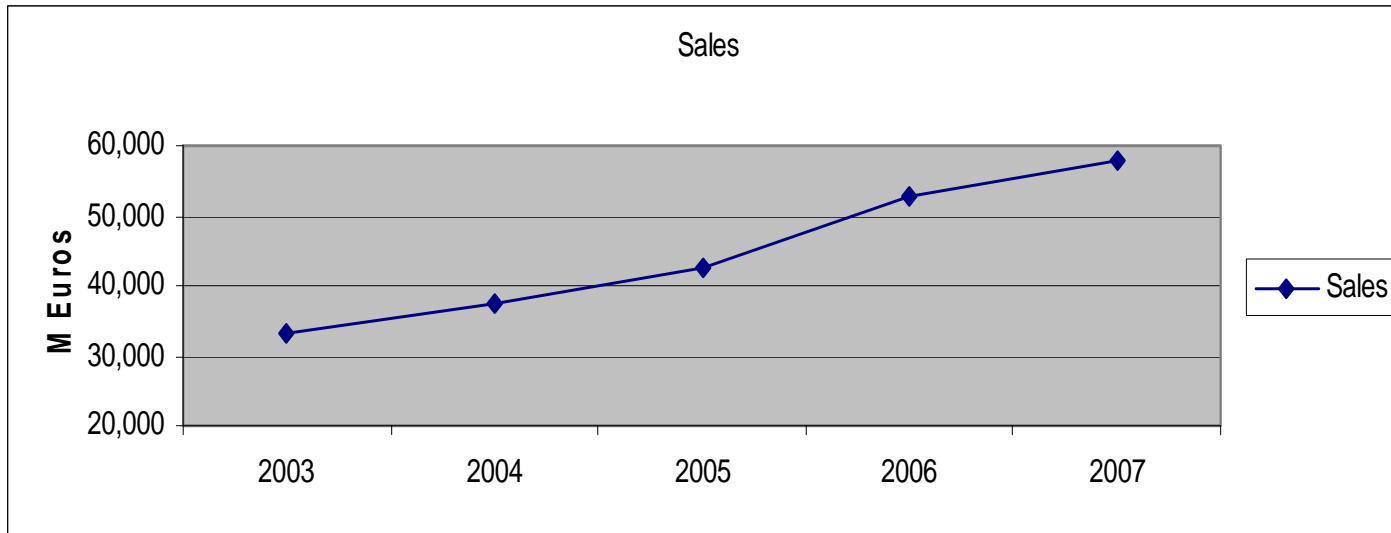


- 20+ years at major manufacturing sites
- 14+ years as a Supply Chain Consultant & Educator
- 14 years as an APICS instructor
- Served as an SME (Subject Matter Expert) on the team that developed the new Certified Supply Chain Professional (CSCP) program.
- Served as an SME on the team that developed the new Certified Forecasting Professional (CFP) for the Institute of Business Forecasting (IBF)

# BASF

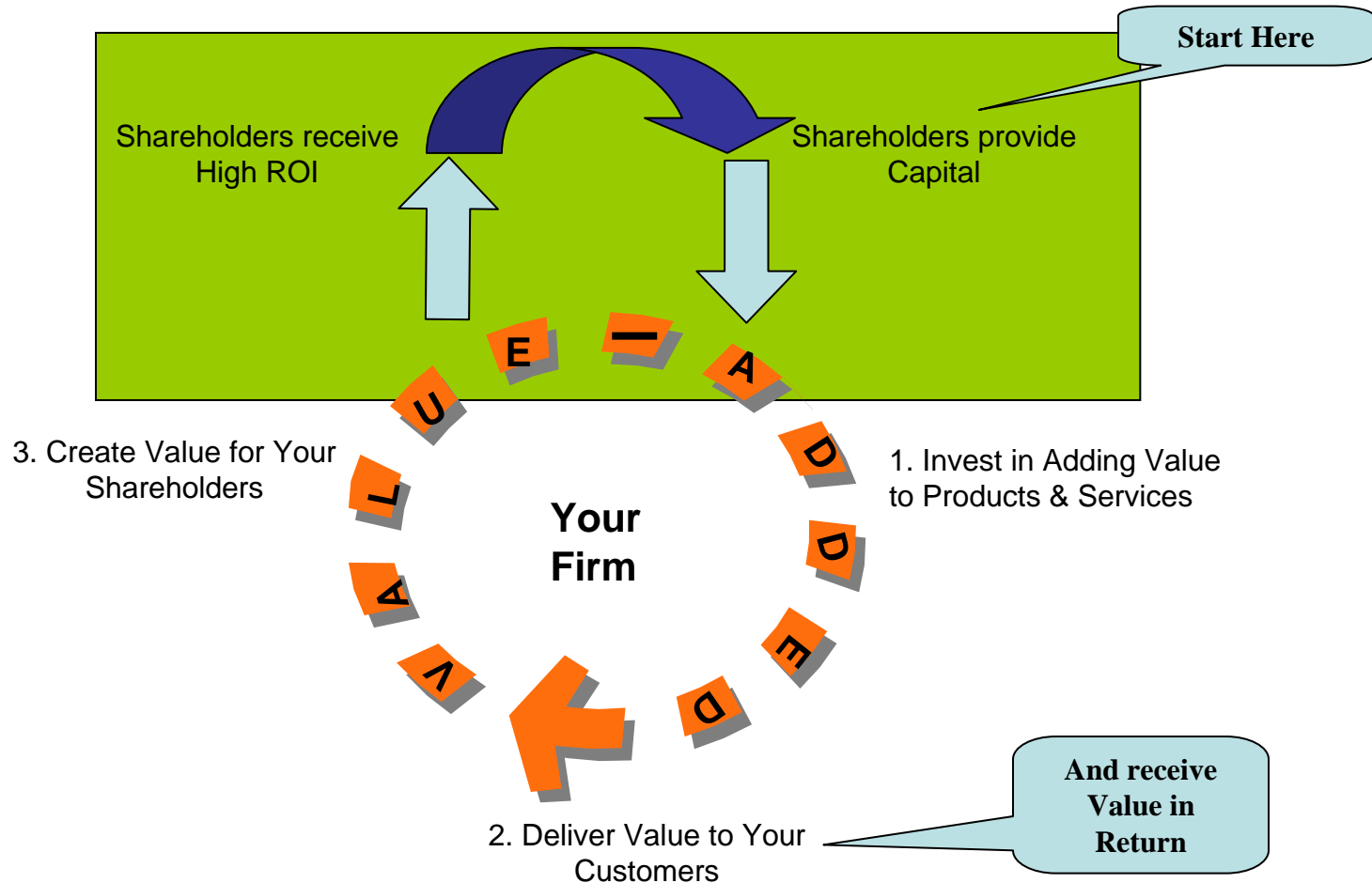
- the world's leading chemical company – “The Chemical Company”®
- founded in 1865 as **B**adische **A**nilin & **S**oda –**F**abrik (BASF)
- Sales in 2007 of approximately \$80B USD
- Over 95,000 employees, 100 large sites and a multitude of small sites across the globe
- Key business strategy is Value-Based Management
- Key execution strategy is Verbund – integrated production processes
- Combines economic success with social responsibility and environmental protection
  - “We don't make a lot of the products you buy.”
  - “We make a lot of the products you buy better.”®

# BASF



Source:  
Yahoo  
Finance

# Value-based Management



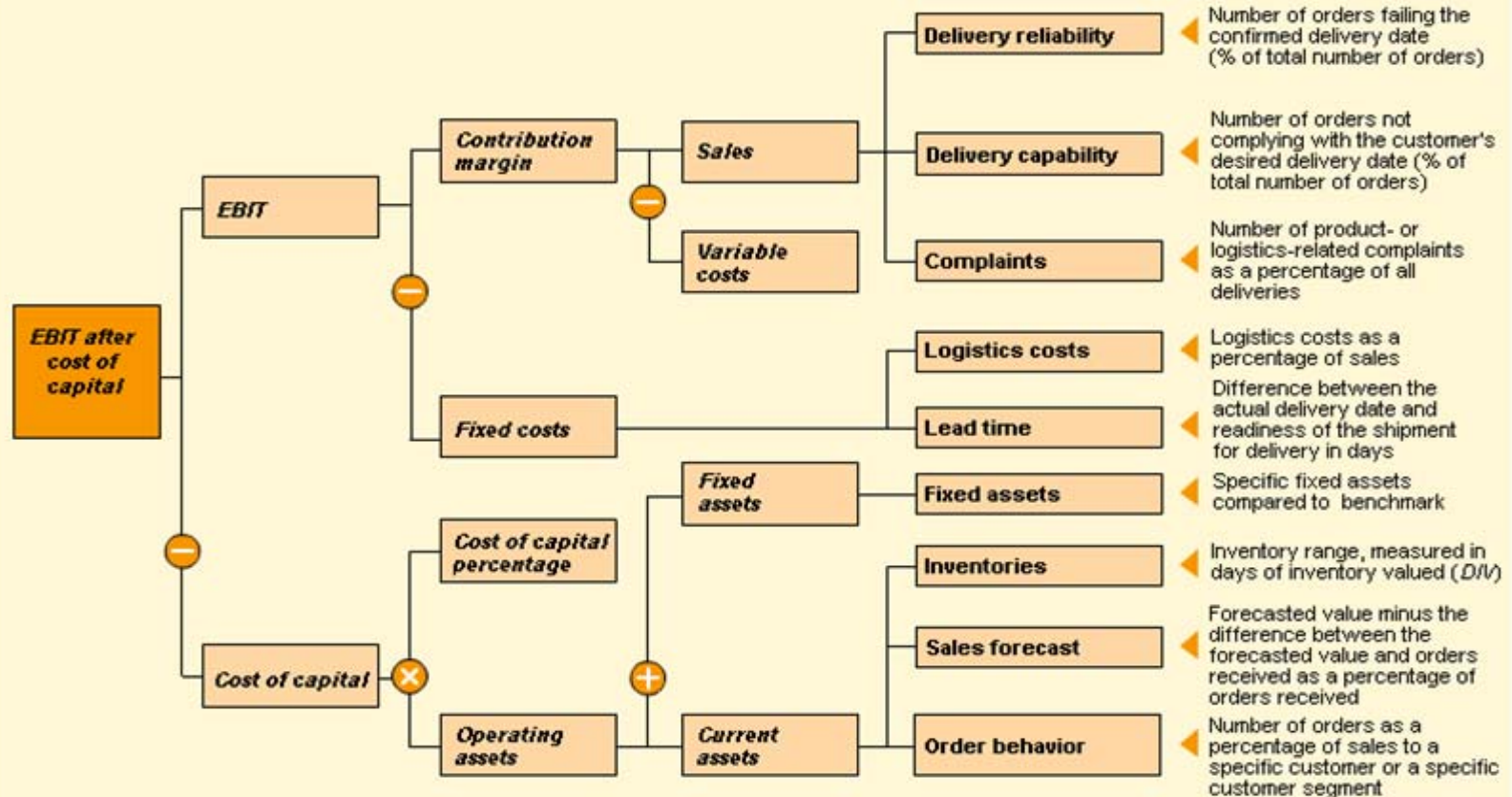
# Value Creation Driver Tree - SCM



## Value Drivers and the Value-driver Tree: Supply Chain Management

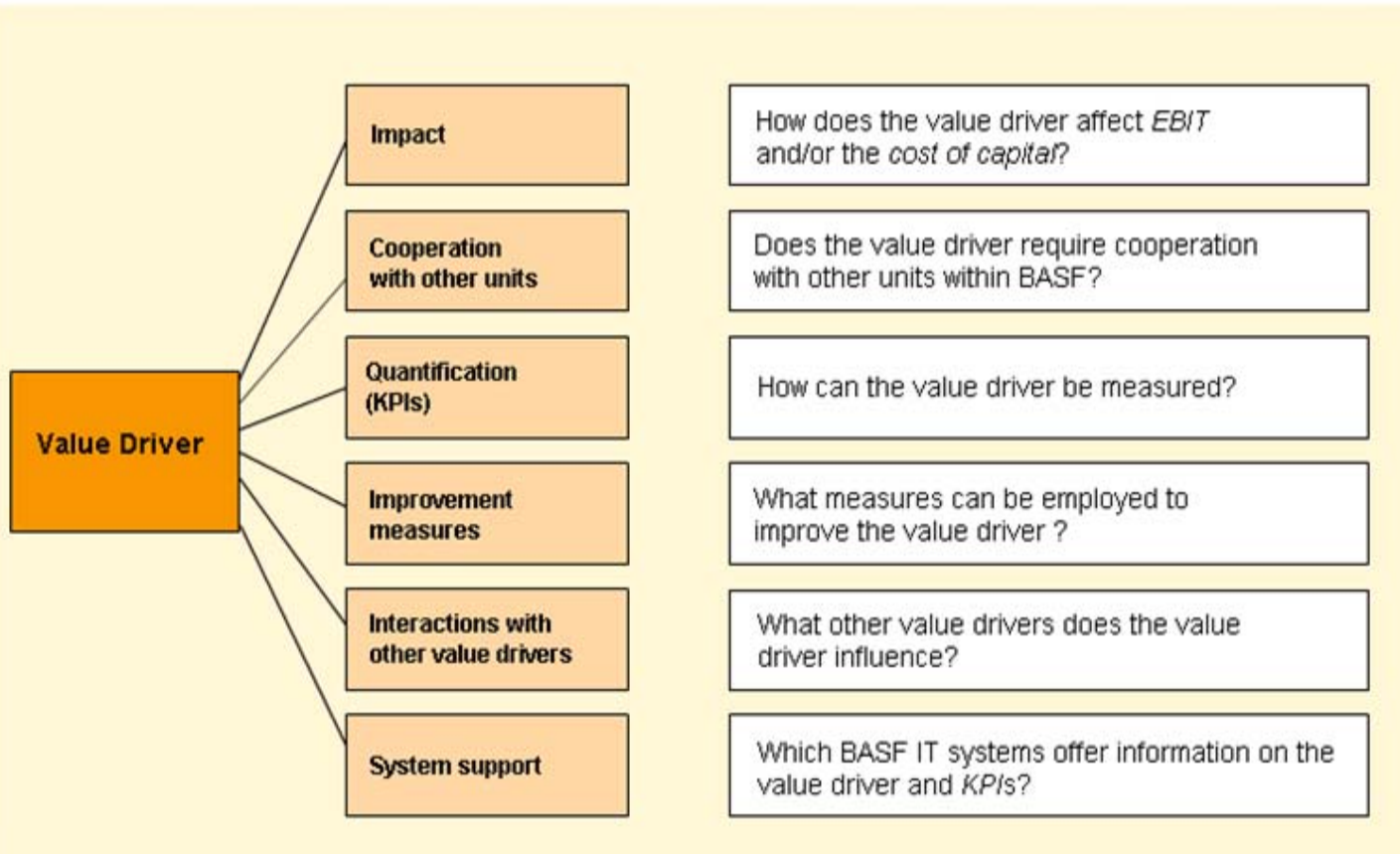
→ For more information, pull your cursor over the lowermost level of the value-driver tree.

Examples for Measurement with KPIs:



# Description of “Inventories” Value Driver

## Inventory



Less Inventory = Lower Costs & Lower COC

YES – Mktg./Sales, Procurement, Mfg.

Days Invested in Inventory (DIV)

Improved forecasting; Better Inv. Control

Logistics Cost, Production Cost, Delivery Performance

SAP R3, GIIC

**Inventory Investment is a “shared” responsibility between Marketing-Sales, Manufacturing, Purchasing and Supply Chain.**

# Value-Based Demand Management

Take actions to ensure you  
deliver the right products to the  
right places at the right prices!

# Demand Value Drivers

- **Customer Relationship Models**
- **Customer Segmentation**
- **Product Rationalization**
- **Pricing**
- **Forecasting**

**THE BEST WAY TO  
MANAGE A SUPPLY  
CHAIN IS TO KNOW  
THE DEMAND CHAIN.**

Source: Supply Chain Management Review,  
September/October, 2001

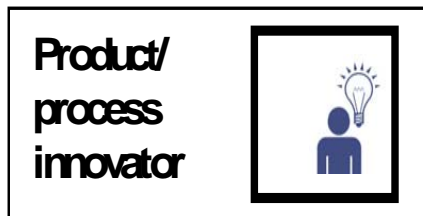
THE BEST-RUN BUSINESSES RUN SAP



# Define Customer Relationship Models



- Limited potential for differentiation
  - Standardized products
  - No (or very little) additional services
- Transparent pricing (e.g., index prices)
- Cost reduction is an important lever for profit improvement



- Business driven by very innovative/new products
- Regular new products launches

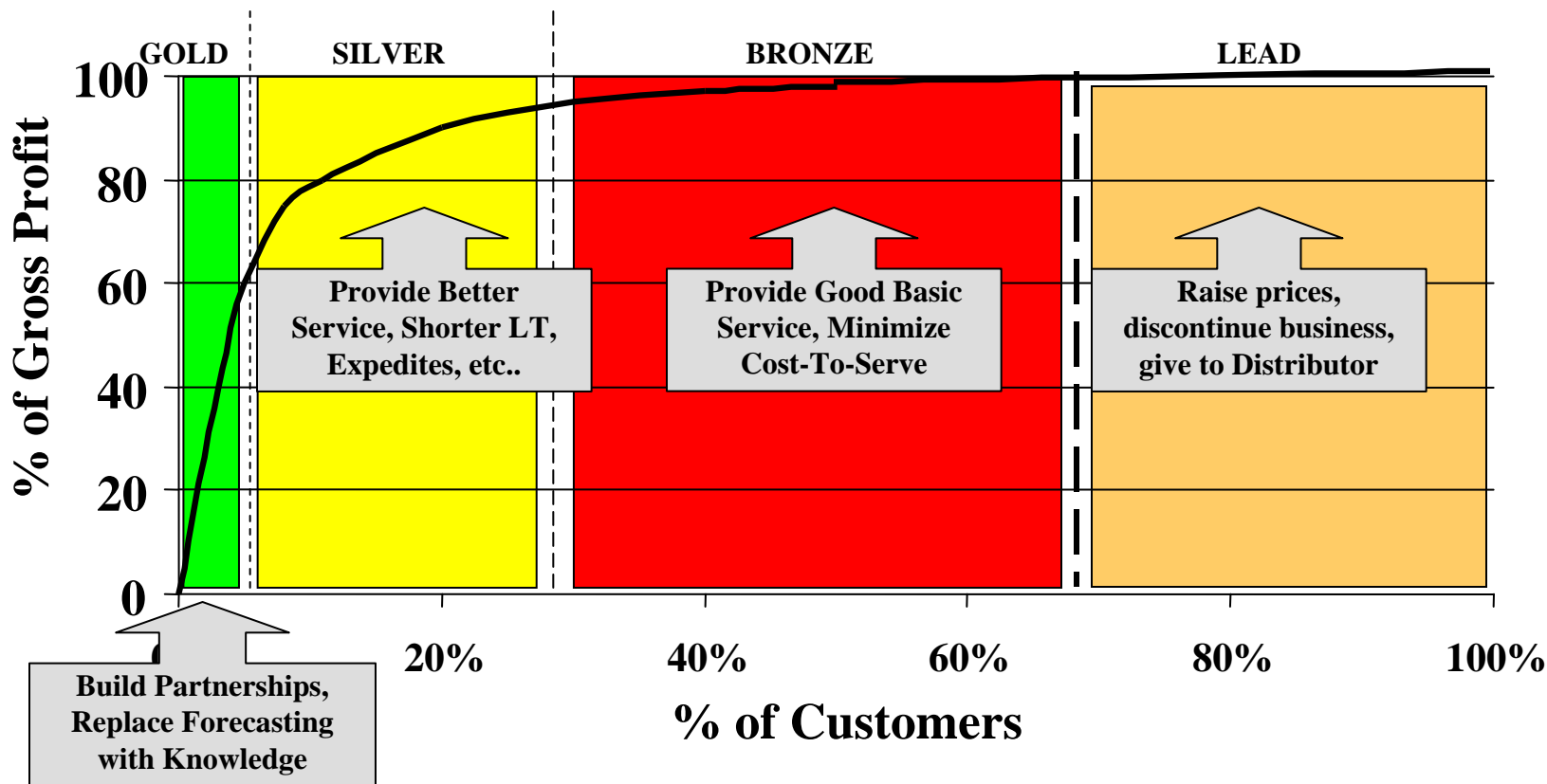
## Competitive Priorities:

- Low Cost
- Reliable Delivery
- Consistent Quality
- Customization
- Delivery Speed
- Flexibility

**Caution: Aligning Resources to Add Value while participating in Multiple Interaction Models is Very Difficult.**

# Marketing/Sales Should Routinely Perform Customer Profitability Analyses

## Gross Profit Margin by Customer Tier



# Objectively Analyze Customer Value

Customer Name	Sales past 12 Months		Proposed Ranking	Comments
	Units	Dollars		
ACME Corp.	1,000	\$100,000	A	
Better Mfg. Inc.	850	\$85,000	A	
JKA Corp.	800	\$80,000	A	
My Firm Inc.	500	\$50,000	B	
That Away Inc.	420	\$42,000	B	
Bad Choice Inc.	25	\$2,500	B	Strategic
You Lose Corp.	15	\$1,500	B	Strategic



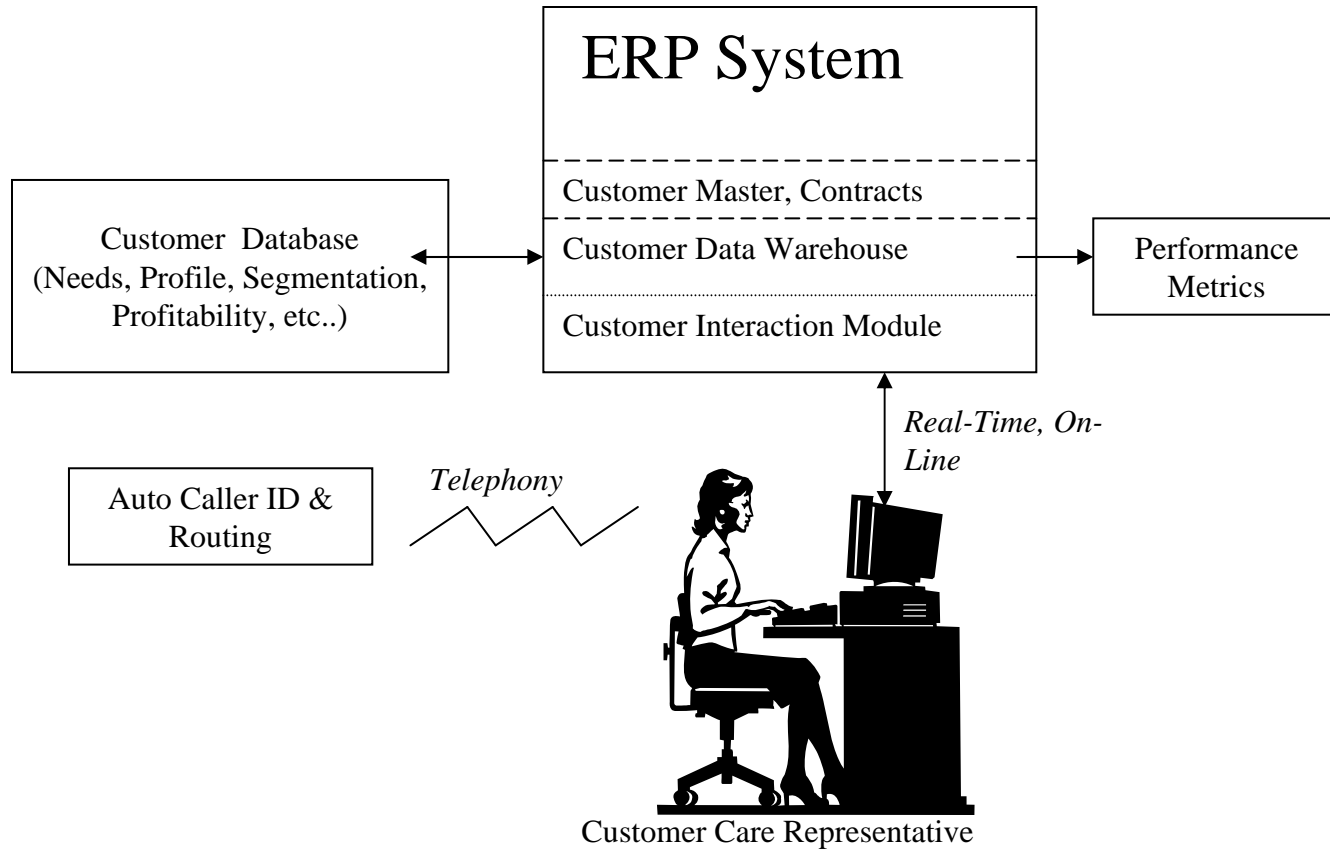
**Marketing & Sales Team**

**Caution: All Deviations from Historical Data must be accompanied by Detailed Plans & KPIs.**

# Implement Value-Based Customer Service Segmentation

	Tier 1	Tier 2	Tier 3
	Key; selected Core and Target	Core and Target; selected Service and Others	Service, Others and Small
Sales Contact	Y	Y	N
Proactive Order Taking	Y	Y	N
Allocation	Y	Y	N
Special Price	Y	Y	N
Exception Price Request	Y	Y	N -except predefined ones
Customer Visits	Y	Y	N
Service Contact	High	High	Standard
Order Priority	1	2	3
Delivery Performance	Very High	High	Standard
Complaint Handling	Priority	Priority	Standard
Service Calls	Y	Y	N
Credit Review (Reduce Credit Block)	Very High	High	Standard
Proactive AR Management	Y	Y	N - except high risk

# Implement IT to Enable Administration of Decisions & Report Results



# Marketing/Sales Should Routinely Perform Product Profitability Analyses

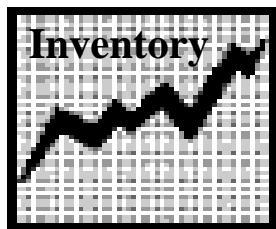
	A	B	C	Totals
No. Of Items	29	40	230 77%	299
Net Sales (\$M)	168	37	17 8%	222
Gross Profit (\$M)	87	14	4.4 4%	105.4
Avg. Inv. (\$M)	10.4	3.6	4.8 26%	18.8
Avg. Days on Hand	30	51	102	183

**Some C Items have negative Gross Profit Margins**

Net Sales (\$M)	Gross Profit (\$M)
\$133	-\$35
\$61	-\$1
\$51	-\$8
\$49	-\$22
\$36	-\$10
\$25	-\$11
\$355	-\$87

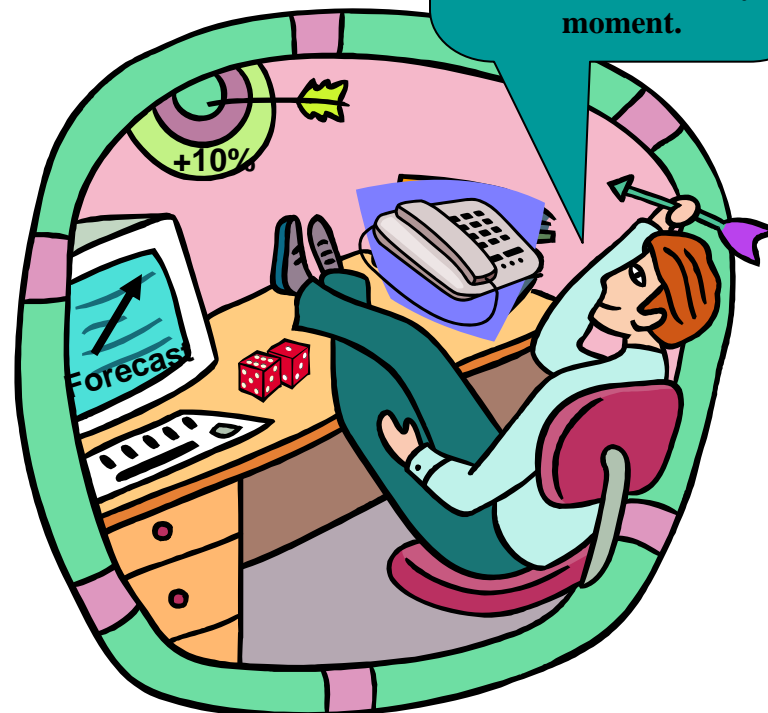
# Implement & Maintain a Formal Demand Planning Process

Bill, this is Jim. I want to make an appointment with you to discuss our Demand Planning process?



The Supply Chain Manager contacts the Marketing Manager.

Oh, Hi Jim. Actually we don't have a formal Demand Planning process. However, I'm updating the latest forecast at this very moment.



The Marketing Manager responds.

# Improve Forecasting-Rationalize Products

The accuracy of the forecast depends heavily on whether or not the forecasting tool is applicable to the history data. One test to determine this is the Coefficient of Variation (COV).  $COV = \frac{\text{Standard Deviation of Period-to-Period Sales}}{\text{Average Period Sales}}$ . If  $COV > 0.8$ , conventional forecasting such as moving average should not be used.

Example where only Bulk Product can be forecasted:

Material (Prod-Pkg)	PRD (Bulk)	Material_De scr.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	20-Mth SUM	20-Mth Avg.	Std Dev	CoV
1	10	Packaged	-	4	-	2	2	2	-	2	-	2	2	-	2	-	2	2	-	2	2	-	26	1	1	90%
2	10	Packaged	-	-	-	-	1	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	6	0	1	376%
3	10	Packaged	-	-	-	1	-	-	-	-	1	-	-	-	-	-	2	4	-	-	-	-	8	0	1	249%
4	10	Packaged	-	3	2	-	4	1	2	-	-	-	1	-	2	3	-	-	-	-	-	2	20	1	1	130%
5	10	Packaged	-	-	1	-	1	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	5	0	1	220%
SUM	10	Bulk	-	7	3	3	8	3	2	2	6	2	3	2	4	3	4	6	-	3	2	2	65	3	2	65%

Example where Product-Package can be forecasted:

Material (Prod-Pkg)	PRD (Bulk)	Material_De scr.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	20-Mth SUM	20-Mth Avg.	Std Dev	CoV
6	11	Packaged	5	5	2	2	2	2	2	4	2	2	6	2	5	6	2	5	2	2	2	5	68	3	1	40%

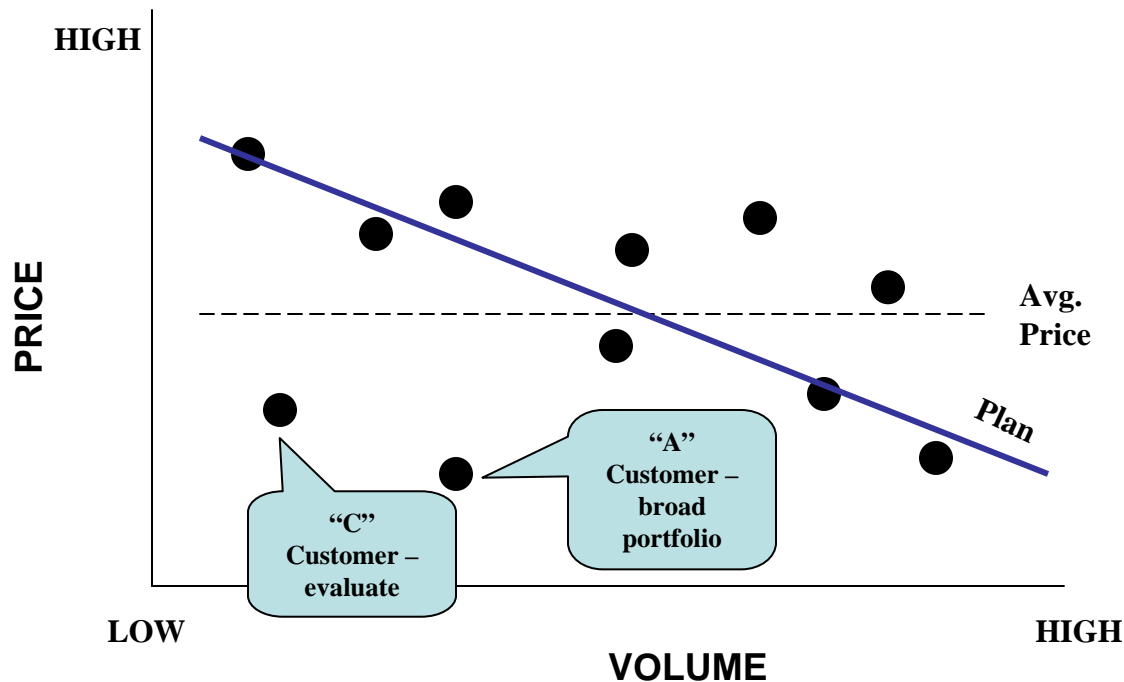
Example of a Material (Prod-Pkg) that should be Made-to-Order:

Material (Prod-Pkg)	PRD (Bulk)	Material_De scr.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	20-Mth SUM	20-Mth Avg.	Std Dev	CoV
7	11	Packaged	2	-	-	-	-	2	-	-	1	2	-	-	-	-	1	-	2	-	-	2	12	1	1	147%

**Supply Chain Definition of Stupidity: Doing things the same and expecting different results!**

# Evaluate & Adjust Pricing

## Commodity “A” – Price:Volume Plot by Customer



Must  
develop  
Plans and  
Monitor  
Progress

**Note: Value Proposition is not Balanced in all Relationships**

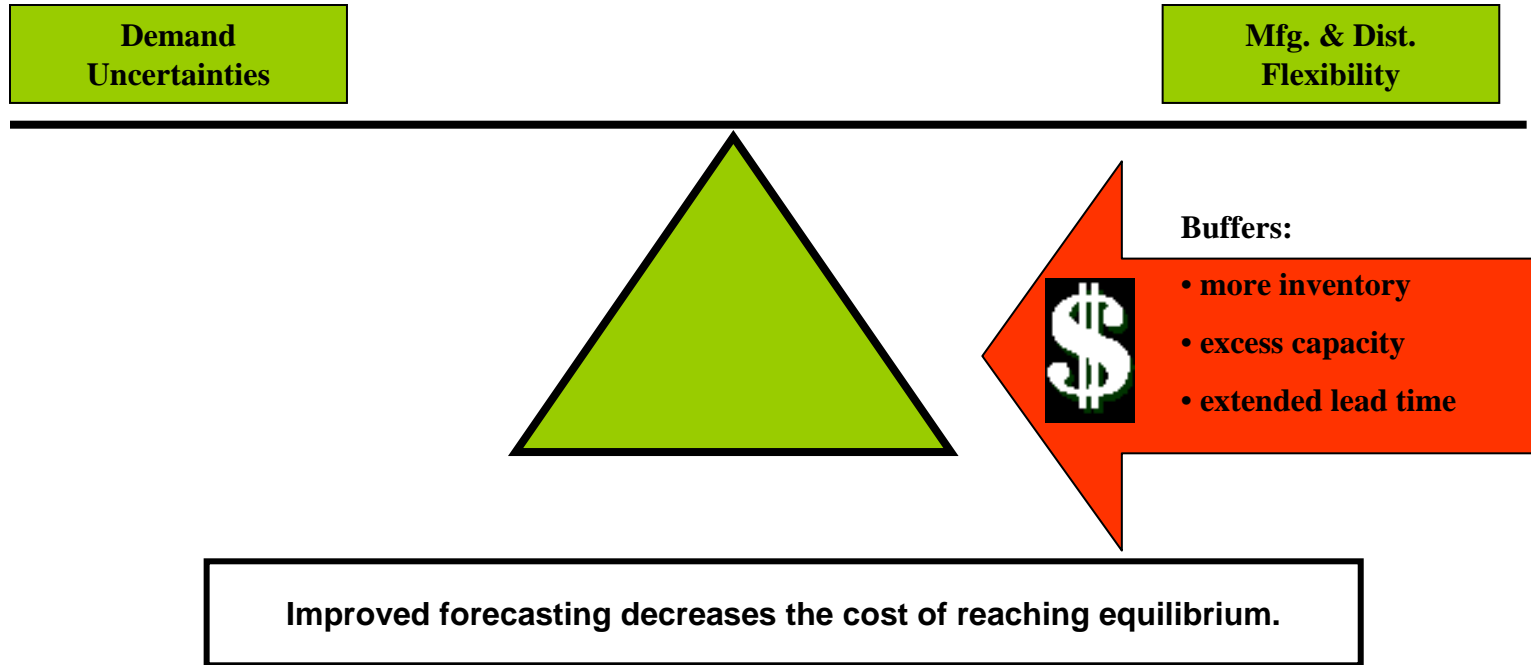
# Value-Based Supply Management

Take actions to ensure you  
deliver the right quantities in the  
right quality at the right time  
and for the right cost!

# Supply Value Drivers

- Delivery Performance
- Manufacturing Costs
- Shipping Costs
- Transportation Costs
- Capacity Related Costs
- Inventories

# Reconciliation of Demand & Supply

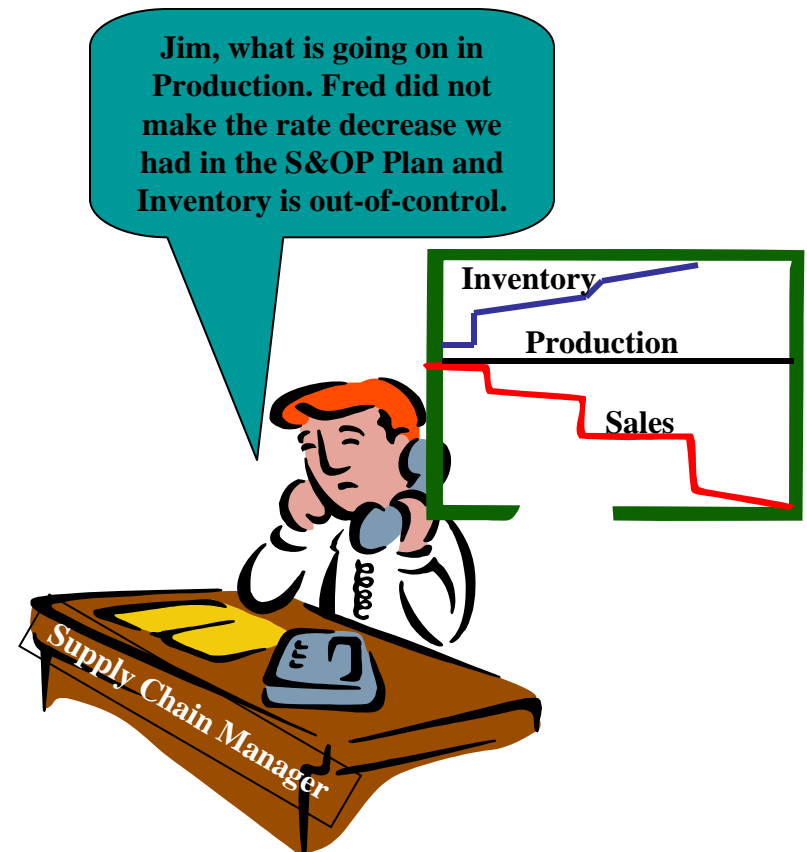


Even the best Demand Management approaches result in some uncertainties. Supply side planning maximizes value by finding the least cost scenario to meet requirements.

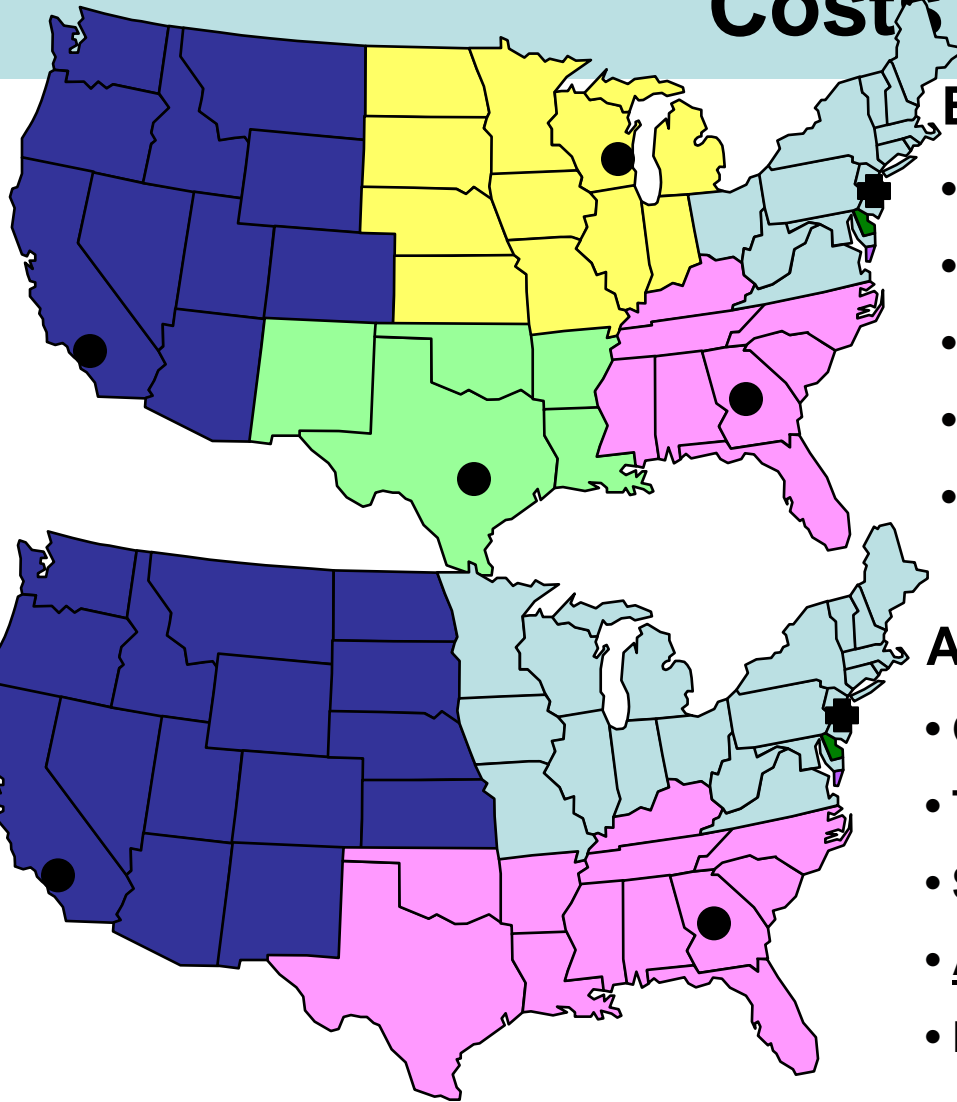
# Use S&OP to Link Value-Based Strategy with Operations



# Implement & Maintain a Formal Supply Planning Process



# Evaluate Networks to Minimize D&T Costs



## Before Location Consolidation:

- One Factory/Central Supply (NJ)
- Four Regional DC's
- \$45M in FG's Inventory
- Approx. 55% SKU Forecast Accuracy
- Max. 3 Days LT (Receive-to-Deliver Order)

## After Location Consolidation:

- One Factory/Central Supply (NJ)
- Two Regional DC's
- \$36M in FG's Inventory
- Approx. 70% SKU Forecast Accuracy
- Max. 5 Days LT (Receive-to-Deliver Order)

Increased Forecast Accuracy 15%, reduced Inventory 20%, Increased MW & SW Lead Times by 2 Days

# Optimize Production, Purchasing & Inventory Costs

	Current Batch Size	Current Batch Size	New Batch Size	New Batch Size
Item#	(Kgs)	(DOS)	(KGs)	(DOS)
3025	14,000	193	8,000	110
3008	21,000	109	12,000	62
3050	9,000	98	7,000	76

**Smaller production runs result in lower inventory costs, less risk of obsolescence, and improved capability to match short-term demand.**

Item#	Source Country	PInd Delv LT (Days)	Order Qty. (Days)	Ratio Ord. Qty. vs. LT
5646	Mexico	18	62	3.5
5138	U. S.	20	54	2.7
5765	Europe	30	106	3.5
5006	China	64	151	2.4

**Total Cost of Ownership must be the focus of purchased order quantities. Buyers driven only by PPV may not make the least cost decision.**

# Inventory Value

# Sample Aggregate Inventory Report

## Days of Supply:

(Code)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AP	288.9	290.8	271.7	242.5	208.5	190.8	184.8	185.1	181.7			
CA	74.4	68.4	67.6	83.7	83.9	94.5	93.3	91.4	69.6			
CP	24.2	27.0	25.3	27.1	29.1	30.9	28.5	26.6	30.6			
CZ	47.4	50.0	55.0	58.8	61.5	58.9	57.1	53.9	51.2			
EC	80.1	83.5	84.8	81.7	75.4	71.5	74.7	76.5	78.1			
ED	49.1	46.7	47.9	47.0	51.8	49.1	50.3	51.5	39.5			
EV	70.5	70.2	72.2	74.5	74.1	74.2	73.2	70.8	67.6			
KS	50.2	50.8	54.9	52.3	50.2	45.0	26.8	28.1	27.8			
KT	67.4	66.8	62.8	60.1	63.3	60.7	60.8	58.3	53.2			
KU	46.6	46.2	42.5	45.3	43.2	42.9	51.3	51.4	46.8			
ME	79.2	81.2	81.7	77.8	75.9	78.2	74.5	73.5	60.9			
1	71.1	72.7	70.7	68.6	66.5	64.4	61.6	60.8	59.2			

**Businesses**

**Company Aggregate**

# Sample ABC Analysis by Inventory Value

Category	No. of Items	% of Items	% of Value
A	26	27%	80%
B	27	28%	15%
C	43	45%	5%

Note: Excludes slow movers and obsolete items.

## Notes:

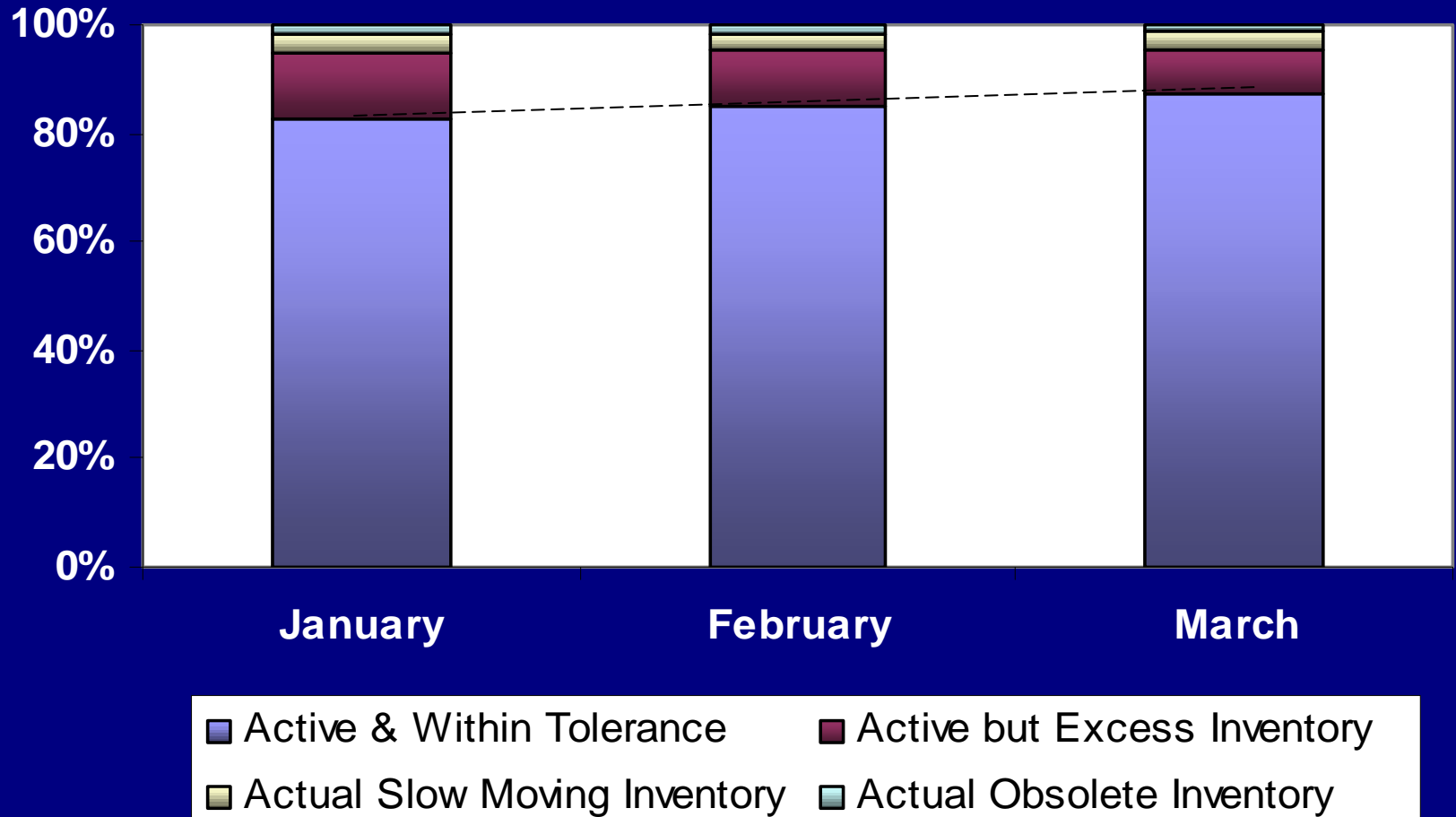
- Need to focus control efforts on “A” items and ensure relatively high safety stocks on other items.
- Strategy must include analyses of risks (e.g. no. of FGs using the raw material; past duration of the sales, etc..)

# Sample Inventory Quality Ratio (IQR) Definitions

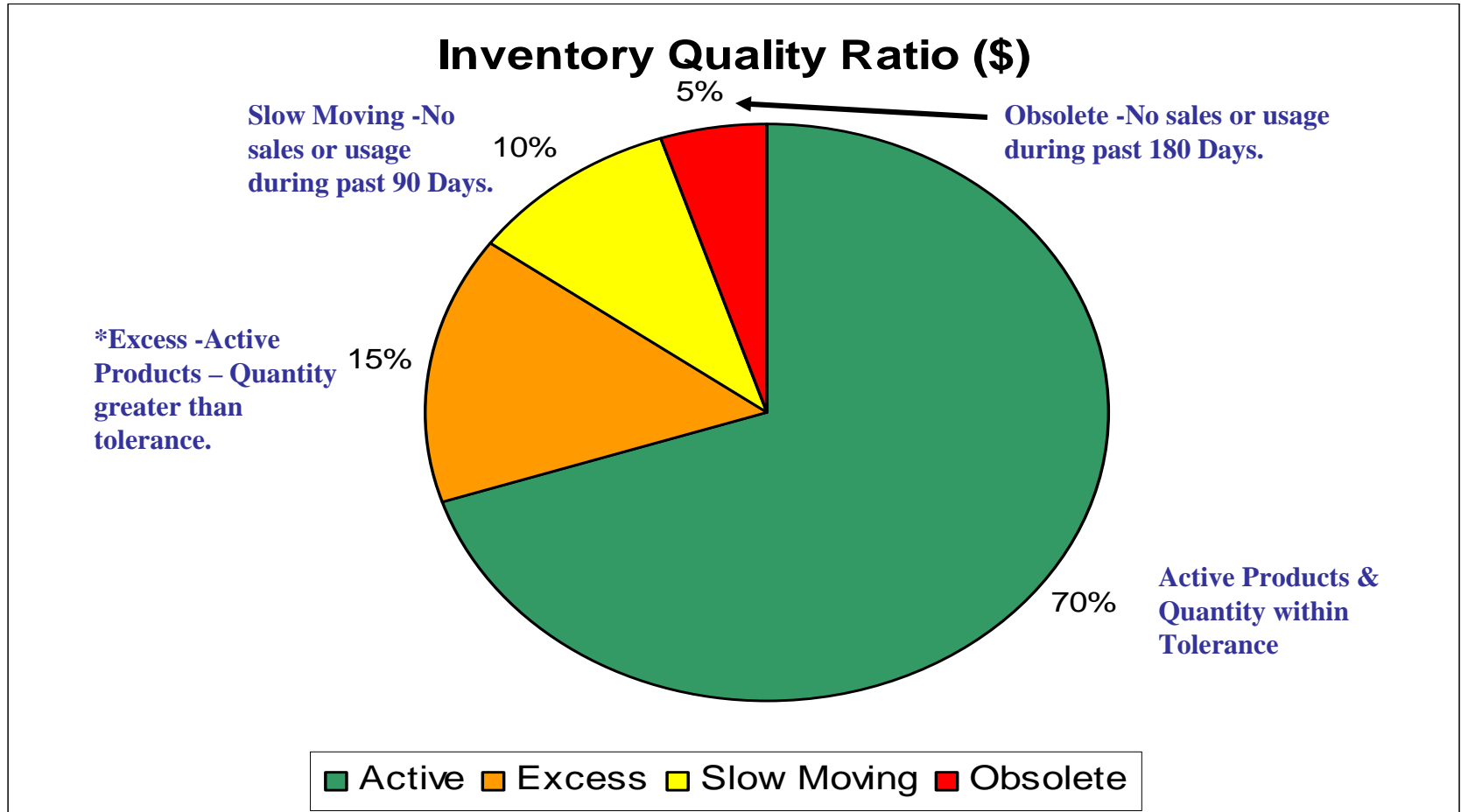
Business Description	Inventory	IQR Category	Definition
Bulk Business	Finished Goods	Active	Sales during past 60 days
		Active but Excess	Quantity & Value > Overall Target for Active Products
		Slow Moving	No sales during past 60 days OR material > 60 days old
		Obsolete	No sales during past 180 days OR material > 180 days old
Seasonal Business	Finished Goods	Active	Sales during past 270 days
		Active but Excess	Quantity & Value > Overall Target for Active Products
		Slow Moving	No sales during past 270 days OR material > 270 days old
		Obsolete	No sales during past 360 days OR material > 360 days old
Batch Business	Finished Goods	Active	Sales during past 180 days
		Active but Excess	Quantity & Value > Overall Target for Active Products
		Slow Moving	No sales during past 180 days OR material > 180 days old
		Obsolete	No sales during past 270 days OR material > 270 days old

**NOTE: These definitions are for illustrative purposes. The appropriate Materials Management person must decide the definitions for their product group.**

# IQR History

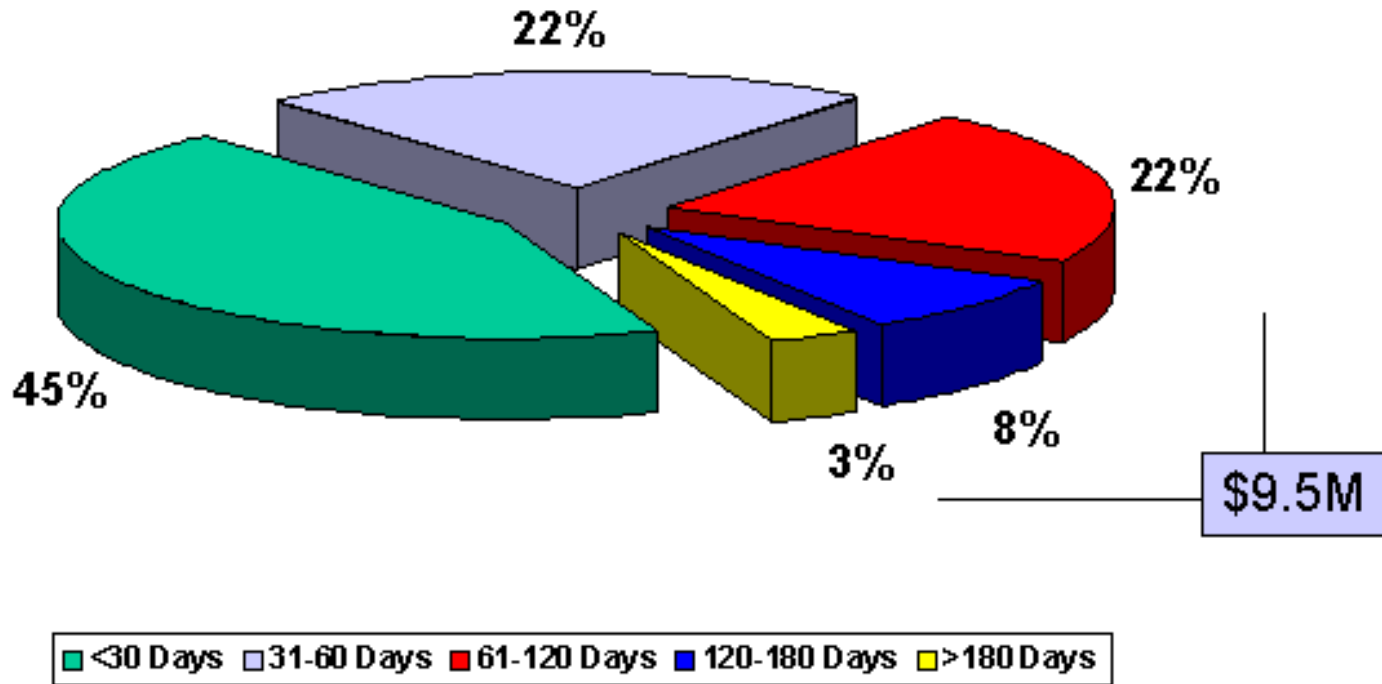


# Sample Pie Chart: Inventory Quality Ratio



\*Excess = more than 25% over target.

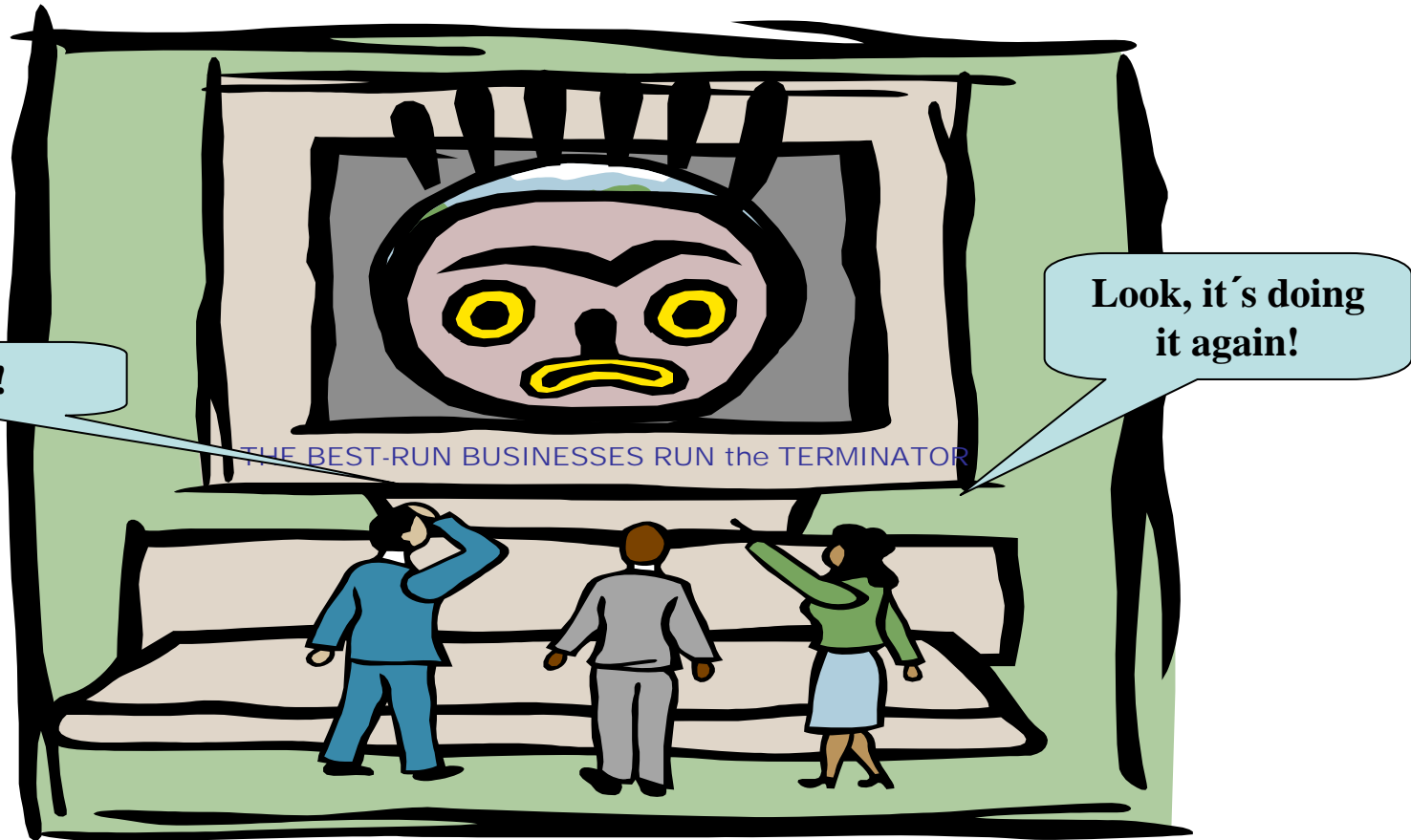
# Sample Aged Inventory Profile



**Note: A 25% reduction in inventory >60 Days reduces inventory investment by more than \$2M.**

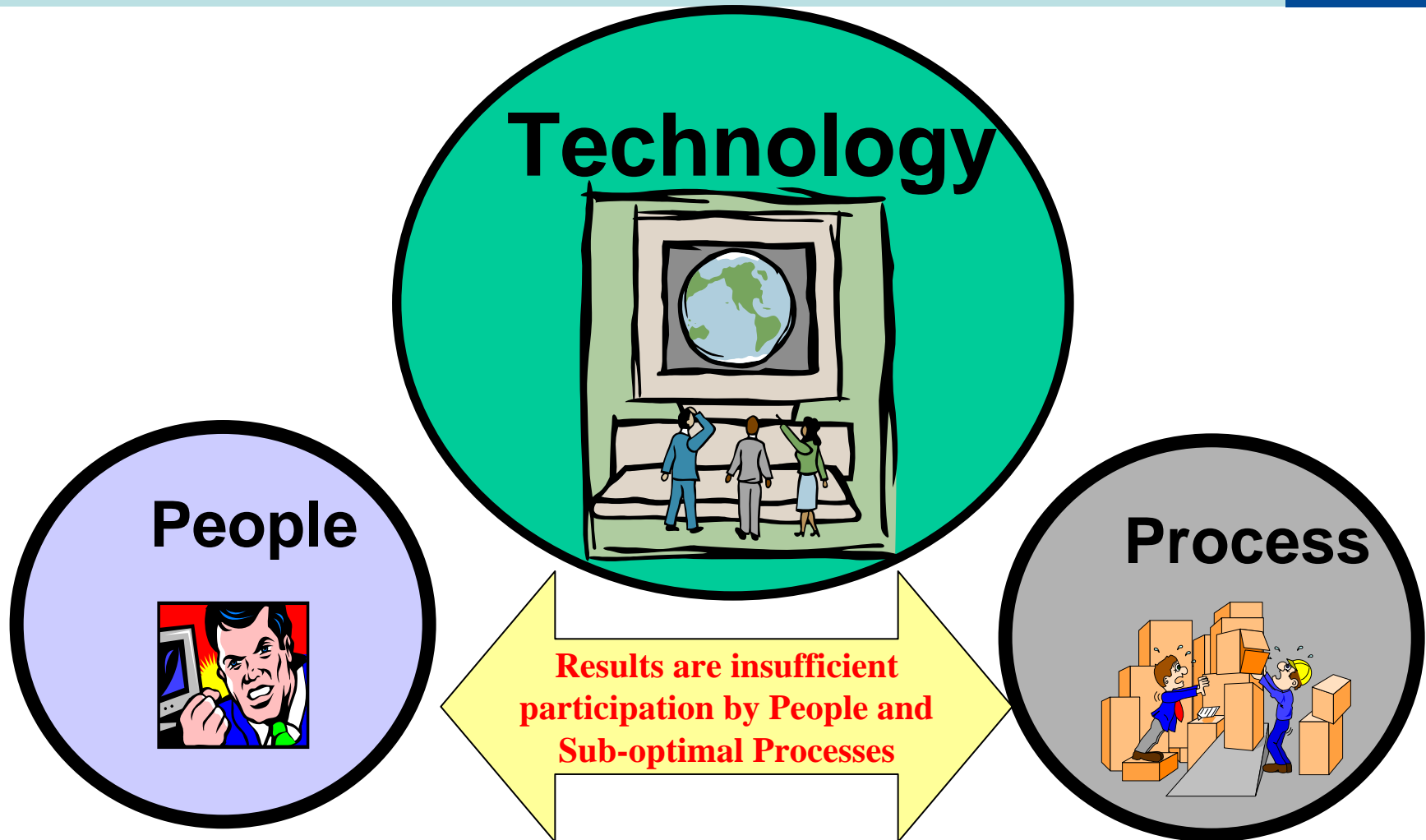
# Value-Based Technologies

# The Machine is NOT the Process

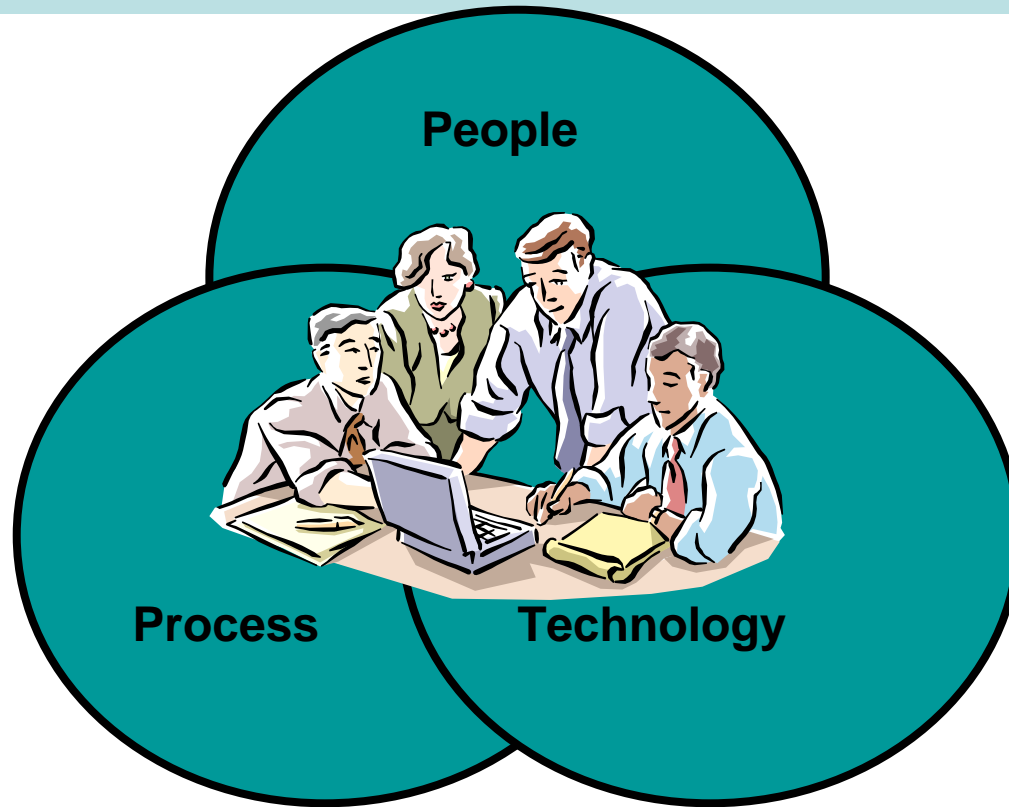


**Are you running your software, or is it running you?**

# Technology Dominates People & Processes



# Re-Balancing Improves Performance

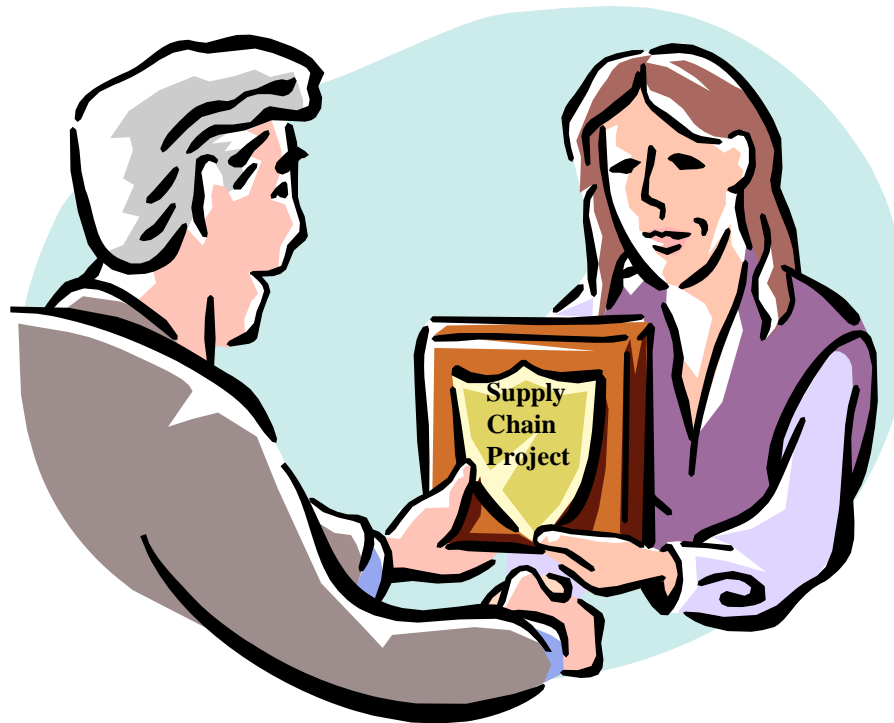


**Triad of Operational Excellence**

**Technology should “ENABLE” not “DOMINATE” !**

# Maintaining a Value-Based Approach

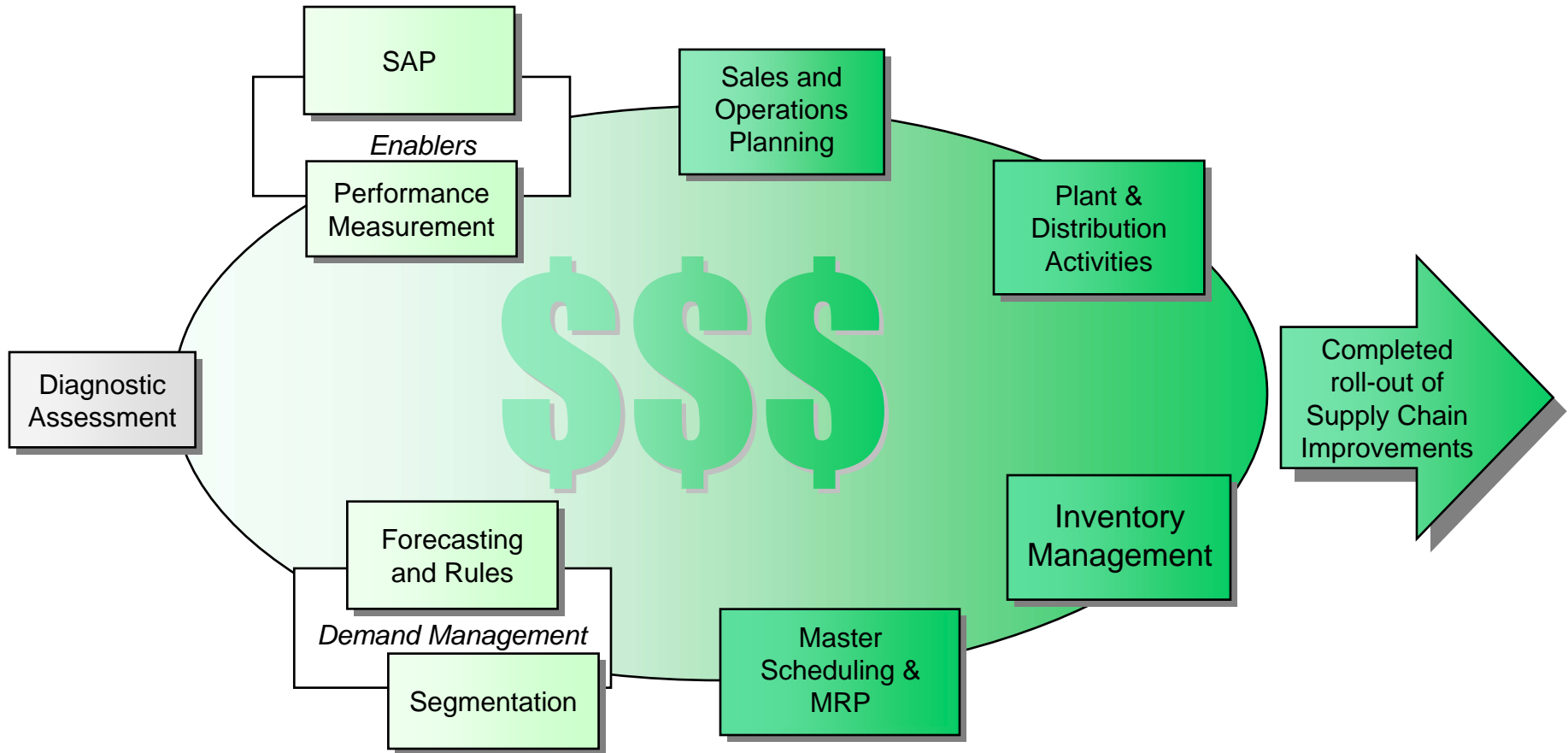
# Need “Top Management” Support



The Supply Chain Project of the Year Award goes to the **“Implementation of a Global Sales & Operations Planning Process in the EVN Business.”** The award pays tribute to innovative supply chain solutions and outstanding performance in the implementation of supply chain concepts. The award is **sponsored by Dr. Kurt Bock, CFO for BASF Group.**

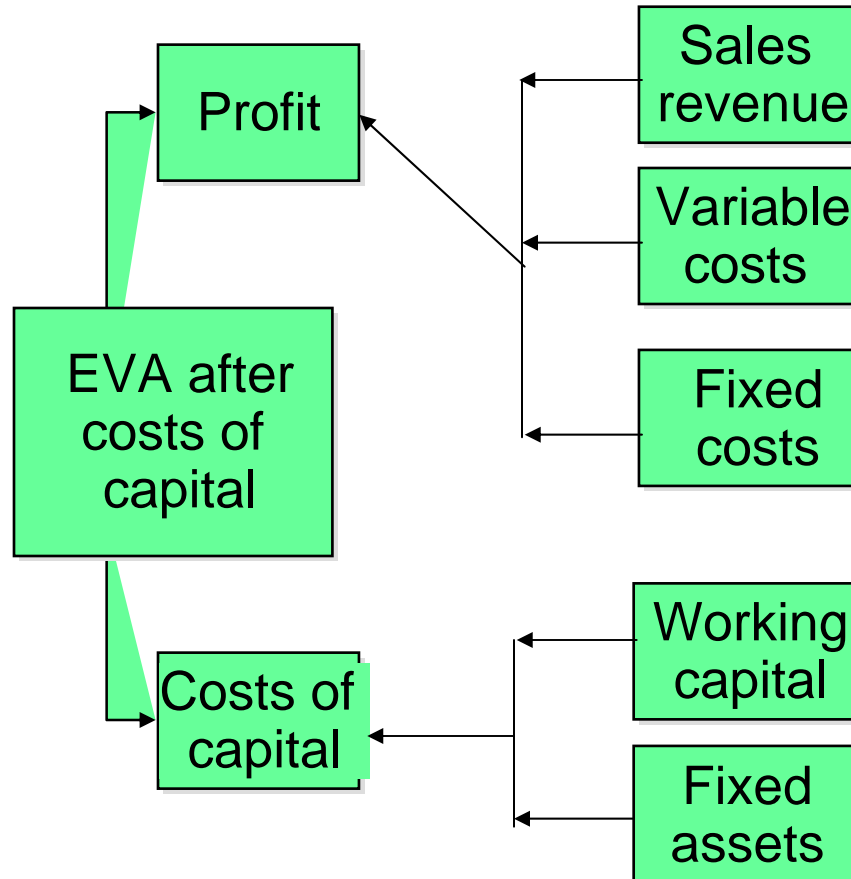
# Supply Chain Management – ROI

Value-Add will increase as Supply Chain processes are improved and further integrated across the enterprise.



*Success is a Journey not a Destination*

# Value-Based Management Case study from a BASF Business Unit



## Sustainable reduction in current assets by \$120m (= ca. 25%)

- Streamlining of product range
- Forecast reliability
- Batch size optimization
- Simplification of global warehouse structures
- Shorter payment terms
- Improved Inventory Control

# Sample Business Scorecard

Period Ending: December, 2006		KPI ScoreCard				REPORTING MONTH		TREND	OWNER
<b>SBU A</b>		PREVIOUS MONTH	TARGET	UPPER LIMIT	LOWER LIMIT	DEC	STATUS	ROLLING 12 MONTH	
		FINANCIAL	Total Sales (\$M)						
Contribution Margin (\$)							OK		J. Doe
DEMAND	Total Demand (M lbs)						OK		J. Smith
	Demand vs. S&OP						OK		J. Smith
	Forecast Accuracy						OK		J. Smith
PRODUCTION	Total Production (M)						OK		B. Jones
	Production vs. S&OP						OK		B. Jones
	S&OP Capacity						OK		B. Jones
INVENTORY	Total Finished Goods						OK		J. Green
	Inventory vs. S&OP						OK		J. Green
	DII (PIT) Raw Materials						OK		J. Green
	DII (YTD) Raw						OK		J. Green
	DII (PIT) Finished						OK		J. Green
	DII (YTD) Finished						OK		J. Green
	DII (PIT)						OK		J. Green
	DII (YTD)						OK		J. Green
Non-Saleable						OK		J. Green	
LOGISTICS	On-Time Shipping						OK		D. Easy
	Actual Ship Qty. vs.						OK		D. Easy
	Total Fixed						OK		D. Easy

**KPI's tied to the Value Proposition and Linked to Individual Performance are Key to Successful Value-Based Management**

# What would be the result of a detailed assessment of your Value-Based Supply Chain Management?

- 1. Significant gaps between better practices and performance. Even Key Stakeholders surprised by findings. Metrics missing for chronic problems. Total “re-engineering” needed for some processes.**
- 2. Some need for improvement but solid processes in general. Key Stakeholders aware of and focused on the right things. Continuous improvement tools needed. Some metrics missing.**
- 3. “As-Is” aligned with better practices. No significant surprises found. Current metrics closely linked to the Value Proposition. Continuous improvement tools in use and focused on adding value.**

