Business As Usual Has Been Cancelled…now what?

New Competitive Imperatives for the Supply Chain

Richard Sherman

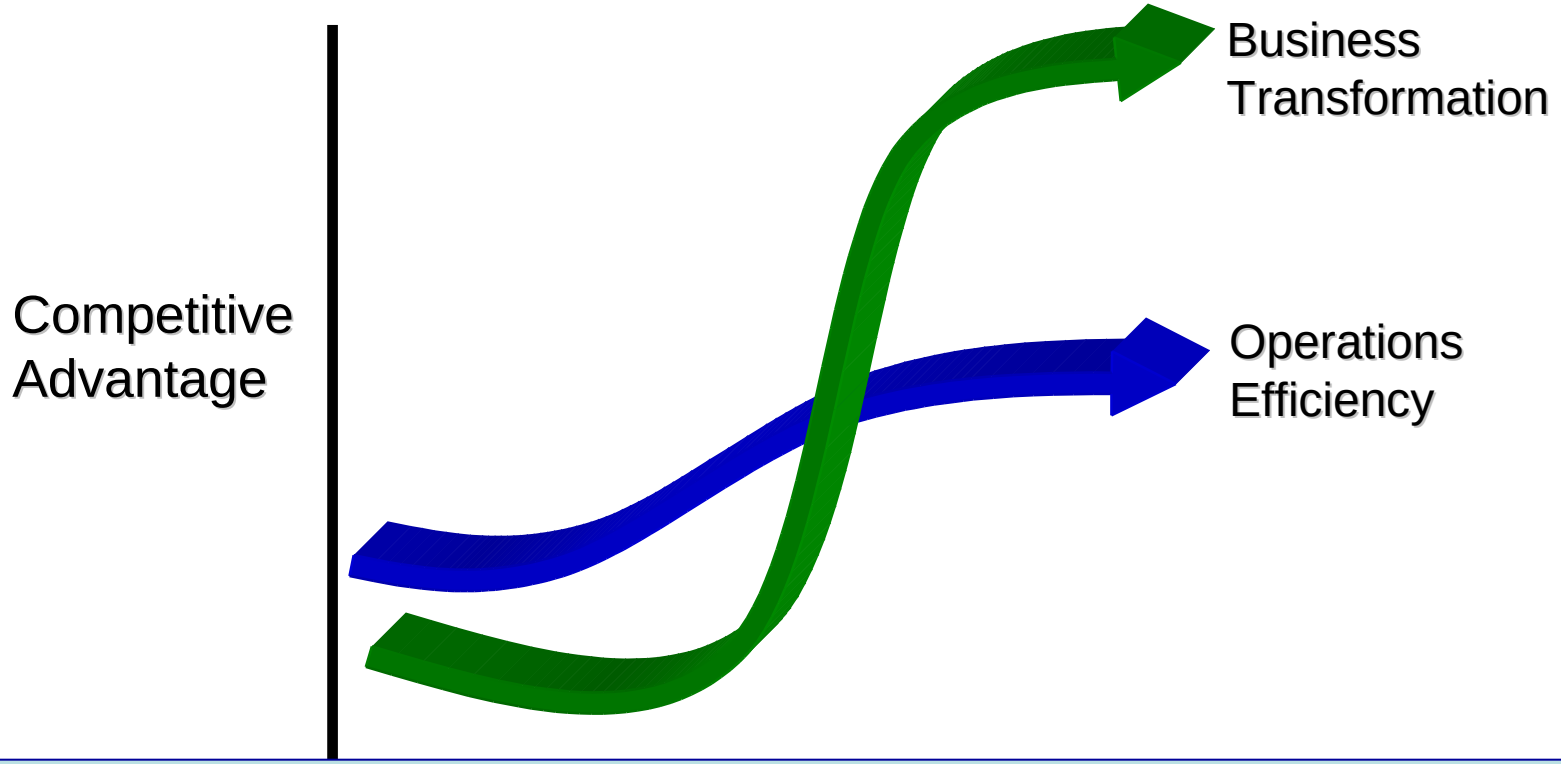
President

Gold & Domas Research

a visioneering company

SCOR® Supply-Chain Council

Creating Market Leadership Requires Innovation . . . Game Changing Strategies



While the World may be Flattening, it's not the just the Playing Field that's changing. It's How You Play the Game within New Paradigms!

Paradigm Shifts

"*A Paradigm is a set of rules and regulations (written or unwritten) that does two things:*

1. It establishes or defines boundaries.

2. It tells you how to behave inside the boundaries in order to be successful."

- Joel Arthur Barker, Future Edge

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Innovation Adoption Theory:

The degree to which an innovation is perceived as being better than the idea it supersedes has a direct impact on the likelihood of adoption.

Perception: "No Pain, No Gain"
Why Change? Status Quo is Okay, Change is Hard Work!
More Gain than Pain must be demonstrated!

Ground Transportation

"The actual building of roads devoted to motor cars is not for the near future, in spite of many rumors to that effect."

Harper's Weekly, 1902

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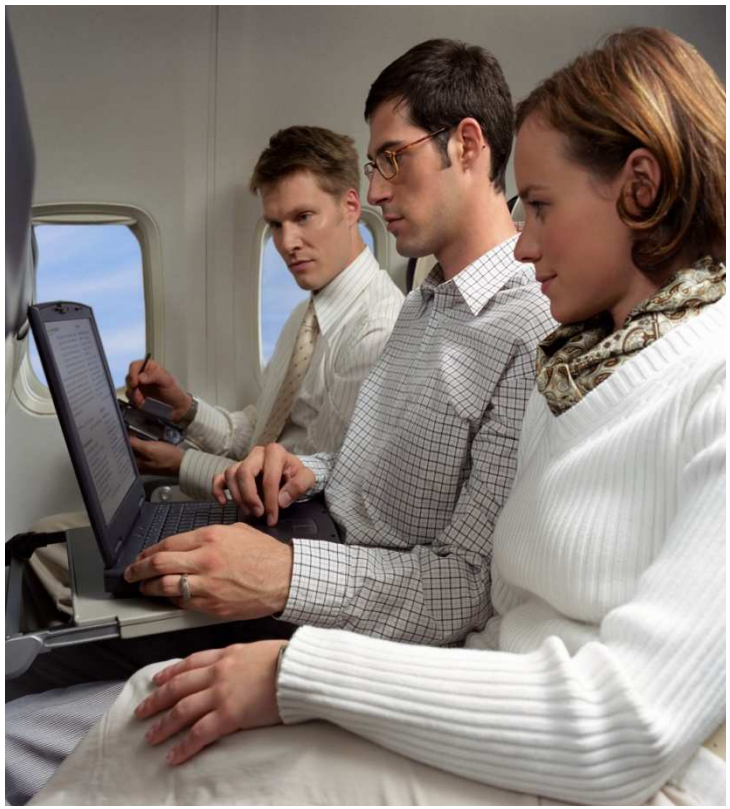
Information Technology



“I have traveled the length and breadth of this country and talked with the best people, and I can assure you that data processing is a fad that won't last out the year.”

-*Editor in charge of business books for Prentice Hall,1957*

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Max Planck - 1936:

An important innovation rarely makes its way by winning over its opponents...

What does happen is that its opponents gradually die...

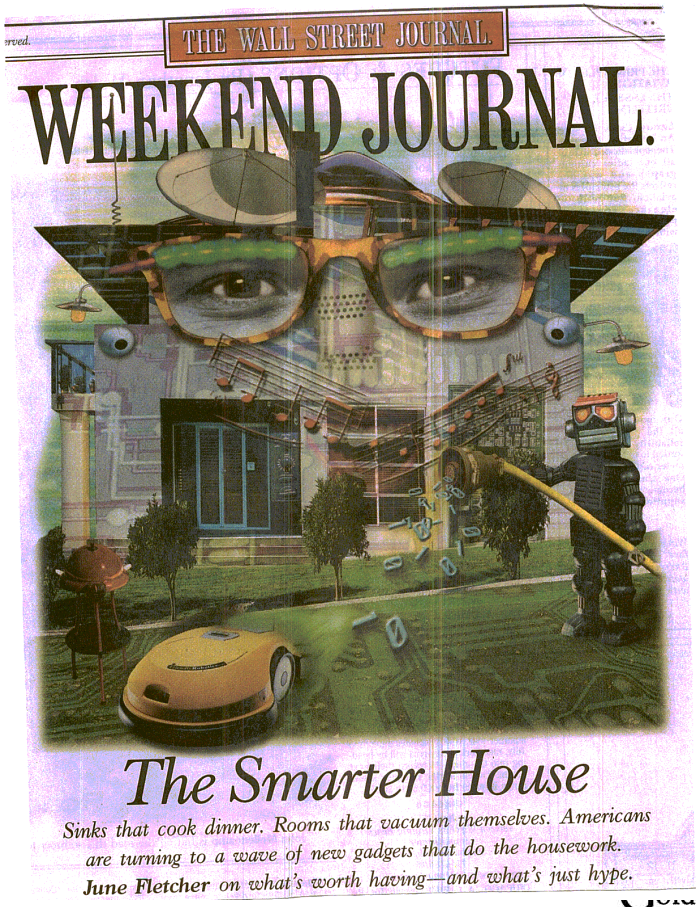
For Example: The All Time Best

"There is no reason anyone would want a computer in their home."

--Ken Olson

chairman and founder
Digital Equipment Corp., 1977

DEC acquired by Compaq (PCs)
acquired by HP (DEC's #1 Competitor!



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Max Planck - 1936:

An important innovation rarely makes its way by winning over its opponents... What does happen is that its opponents gradually die...

Can the business survive while waiting for Old Ways to die?

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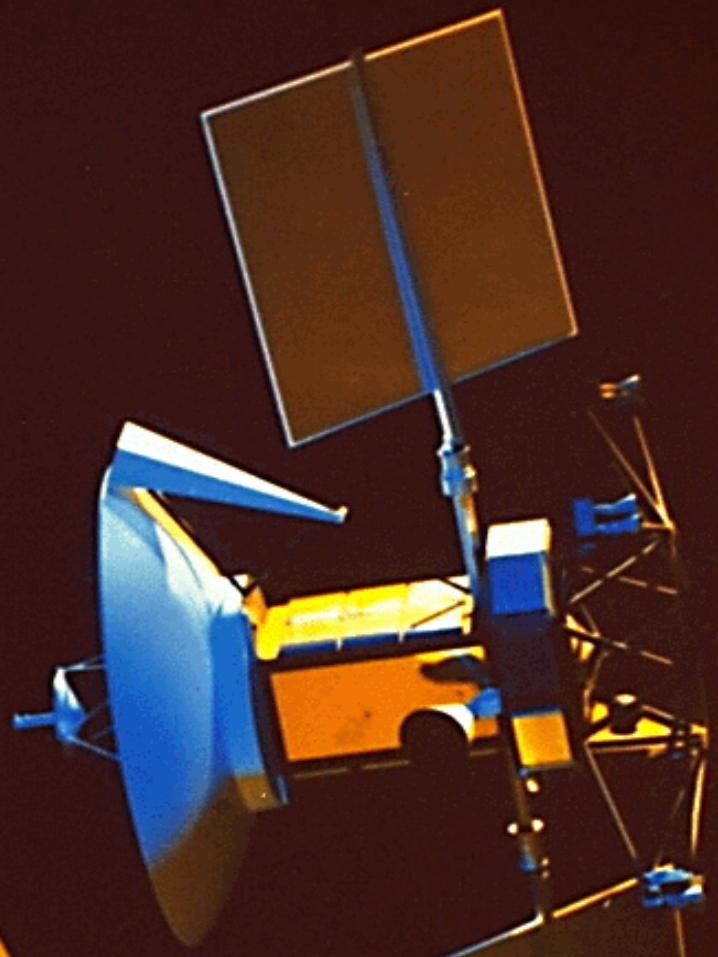
Reengineering Paradigm

"I can't stand this proliferation of paperwork. It's useless to fight the forms. You've got to kill the people producing them."

- Vladimir Kabaidze, former USSR

The Point



"Progress is impossible without change;

Companies must continuously Innovate, Improve & Adapt in response to the Dynamics of Market Change!

"Change is inevitable, Growth is Optional"

Companies Must Respond to the Challenge

- Increased need to differentiate in a flat world
- Time compression – global sourcing & delivery
- Customers expect perfect accuracy, information, and service (RFID, Customization, etc.)
- Competition for capital is intense – pressure to optimize material flow and inventory increases
- Companies will seek to leverage more outsourced business, manufacturing & logistics processes
- Companies must be more agile responding to change faster and managing more inventory locations

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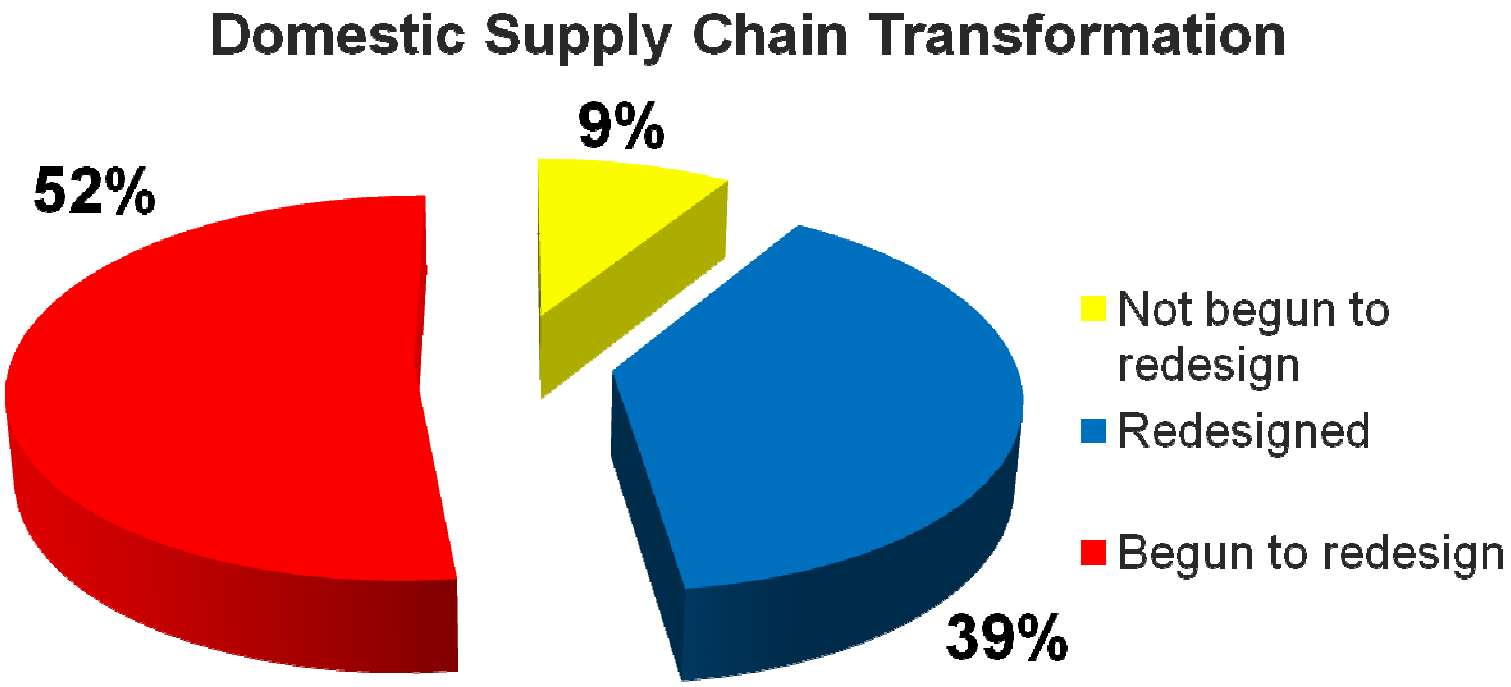
Companies Are Reinventing Their Supply Chains



Source: Aberdeen Group, August, 2008

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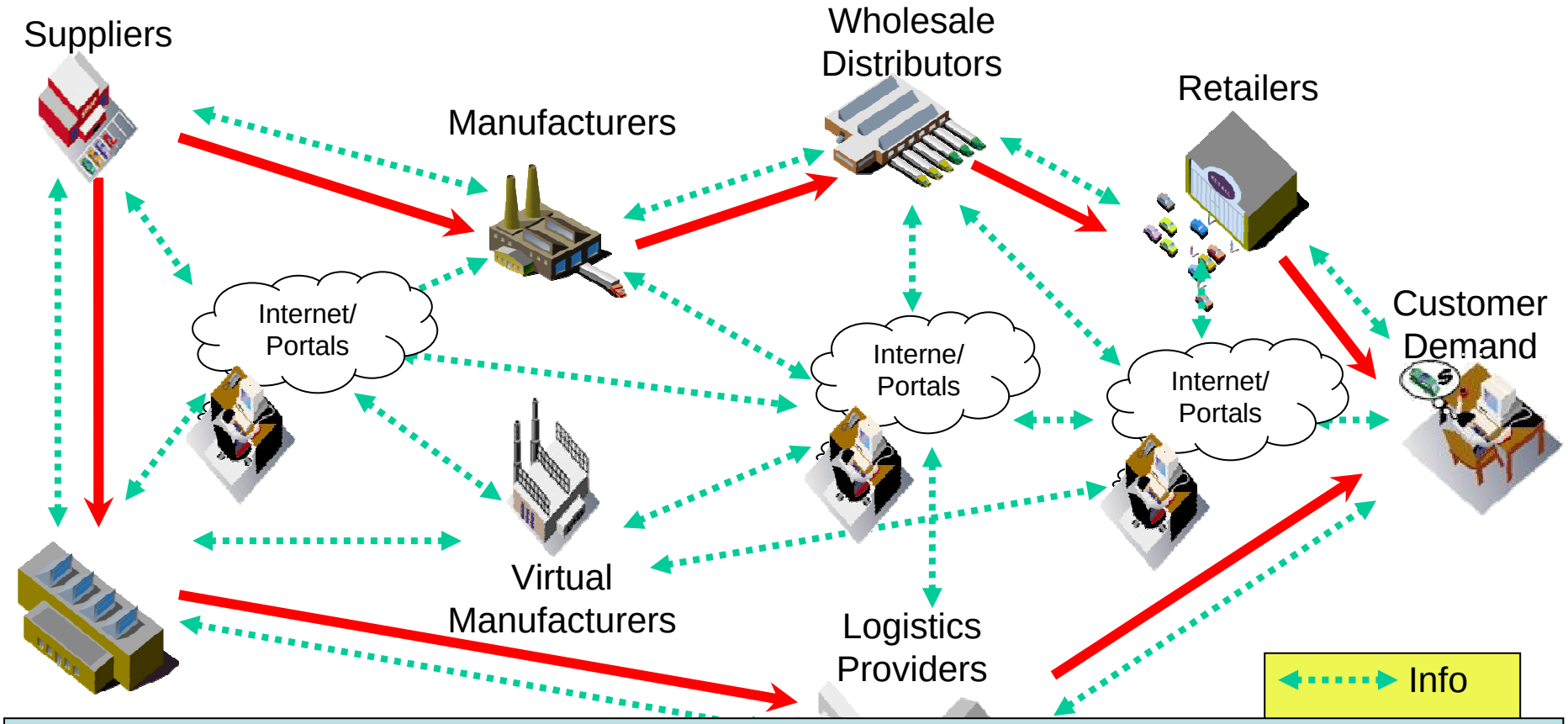
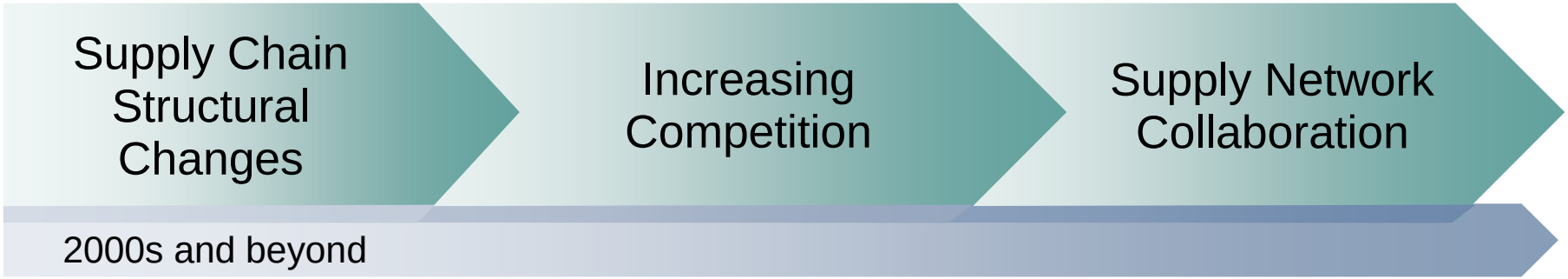
The Supply Chain is Evolving to a Collaborative Supply Network



Companies Must Transform Their Operating Processes To Become Customer Focused, Demand Responsive, Collaborative, & Profitable

An Increasingly Competitive Marketplace Compounds the Demand for Collaboration



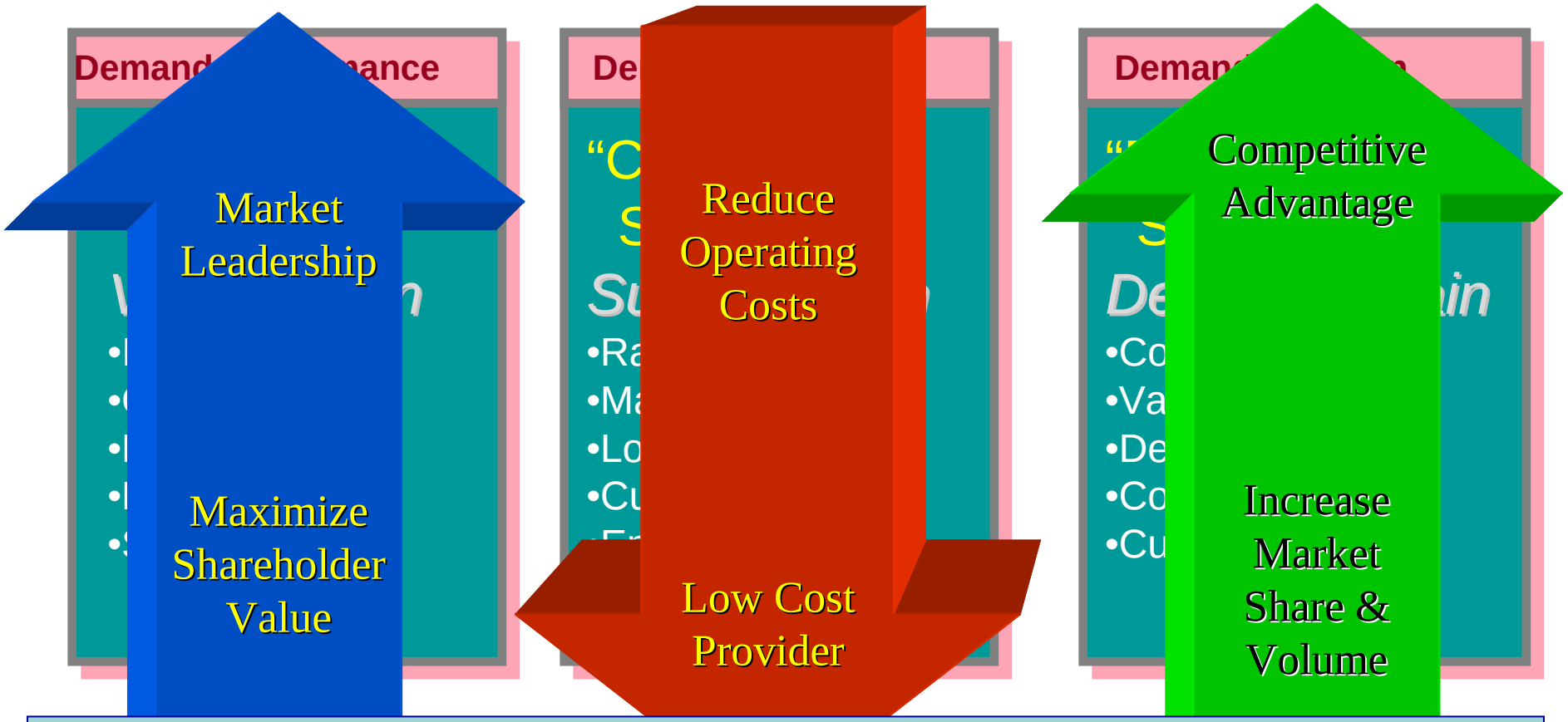
- Globalization
- Outsourced Manufacturing
- Multiple Distribution Channels
- Increased Partnering

- Increasing Customer Requirements
- Shorter Product Lifecycles
- Lengthening Supply Chains
- Tighter Delivery Deadlines
- Product Sophistication
- Inventory Constraints
- Transportation Constraints
- Margin Erosion

- Portal Strategy & Implementation
- New Global Markets
- New Ways to Interact with Customers and Suppliers
- New Approaches & Systems Required
- Increasing Pressure for Rapid Decision Making

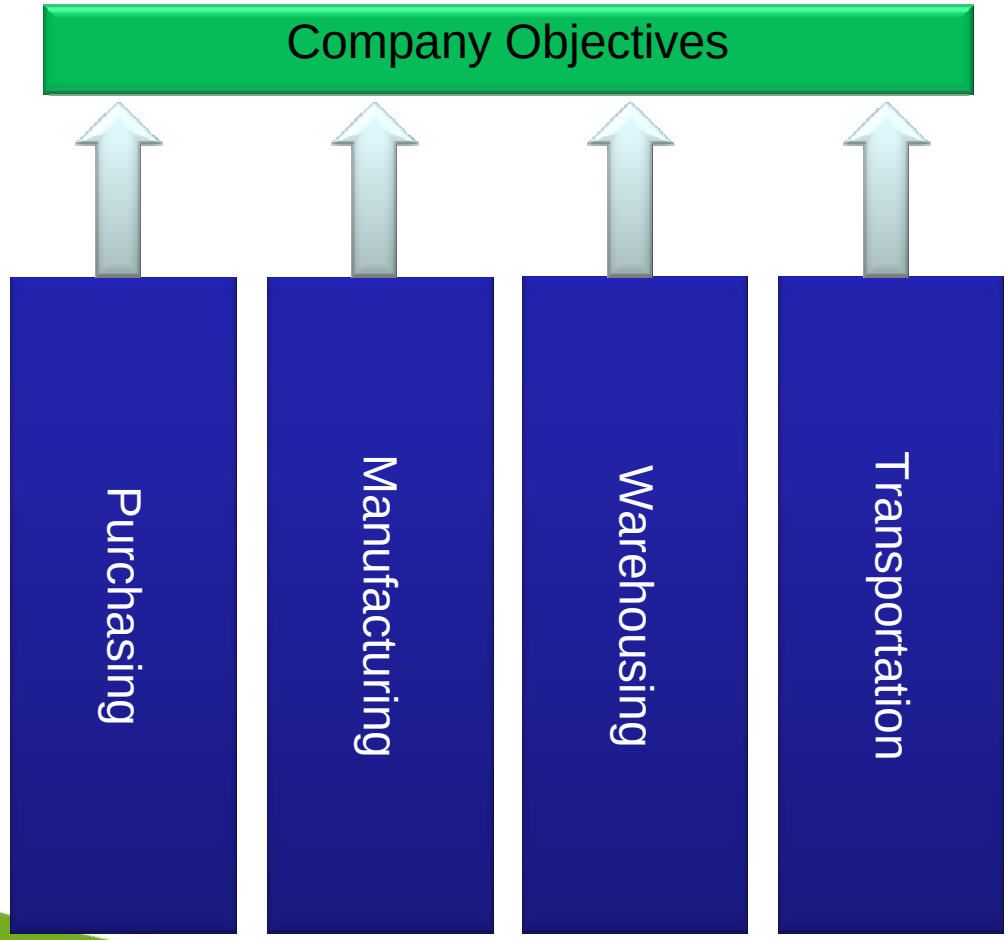
Implementing Change is a Collaborative Process. Friedman mentions collaboration 469 times in The World is Flat!

Business Processes Drive Enterprise Value



People and Processes Act Together & Separately to Create Change Throughout the Organization!

In the 80's, Operating Departments



Traditional organizational structure placed emphasis on organizing a **"department's"** activities around achieving corporate goals creating "silos" of activity.

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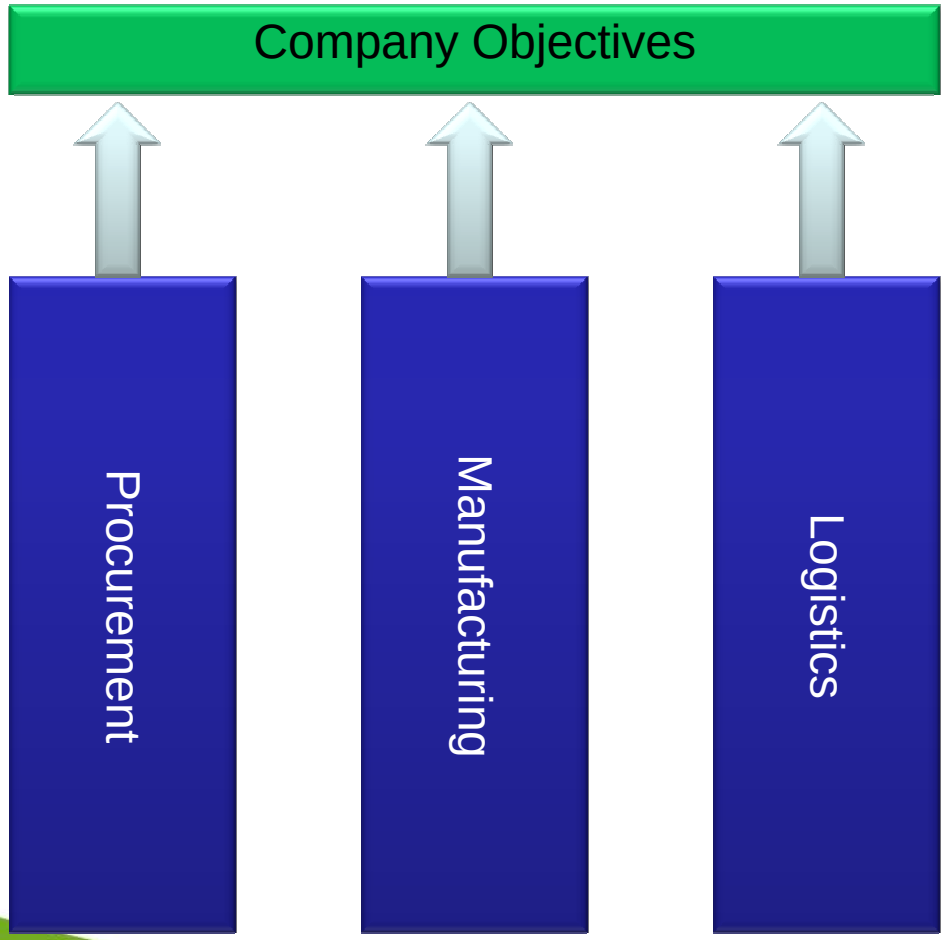
In the early 90's, Functional Integration



Business Reengineering placed the emphasis on optimizing a **"Function's"** activities –deepening the silos.

However, channel power began shifting away from supply as the **"Voice of the Customer"** became stronger and competition broader…

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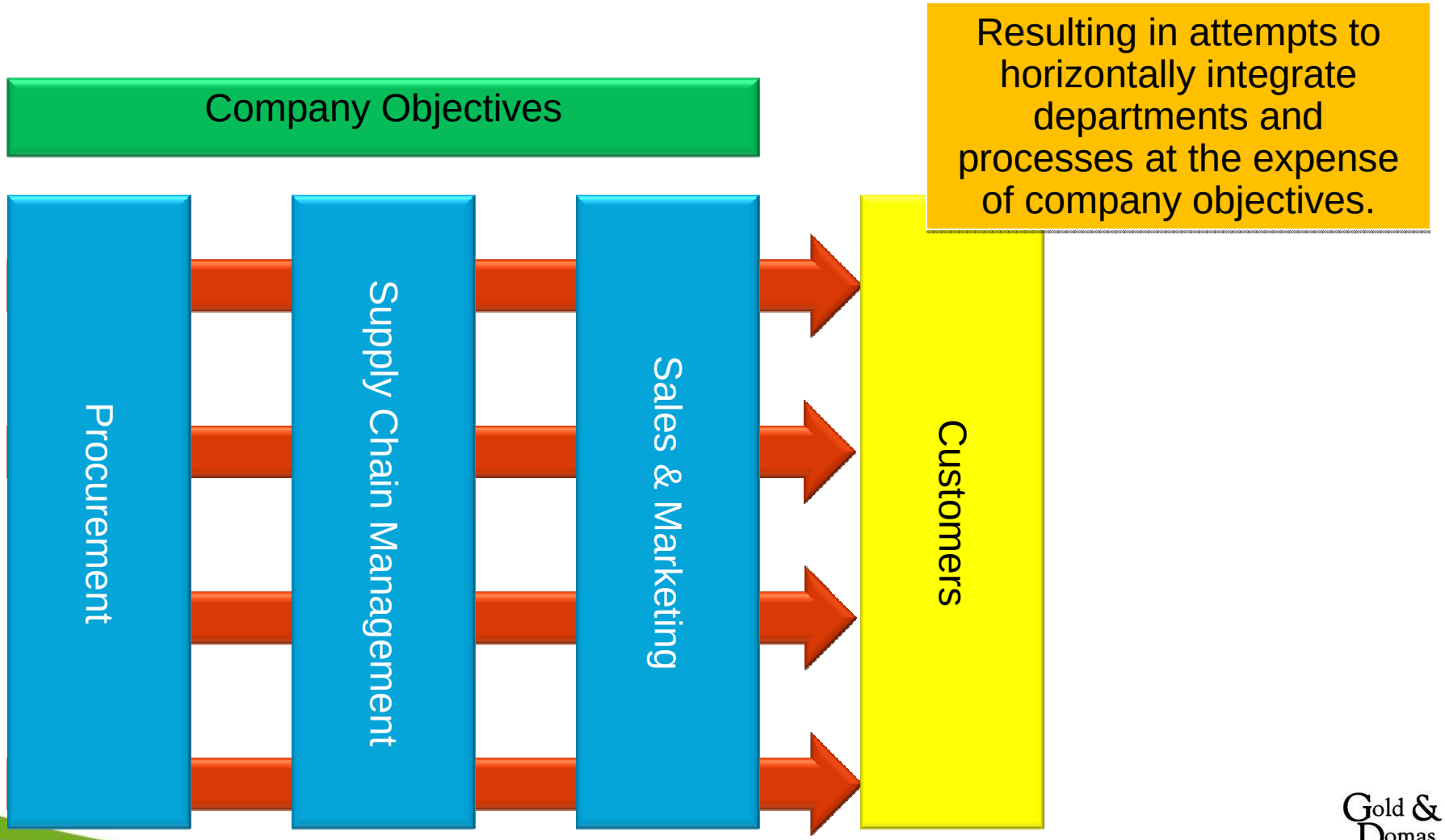
In the late 90's, Cross Functional Integration



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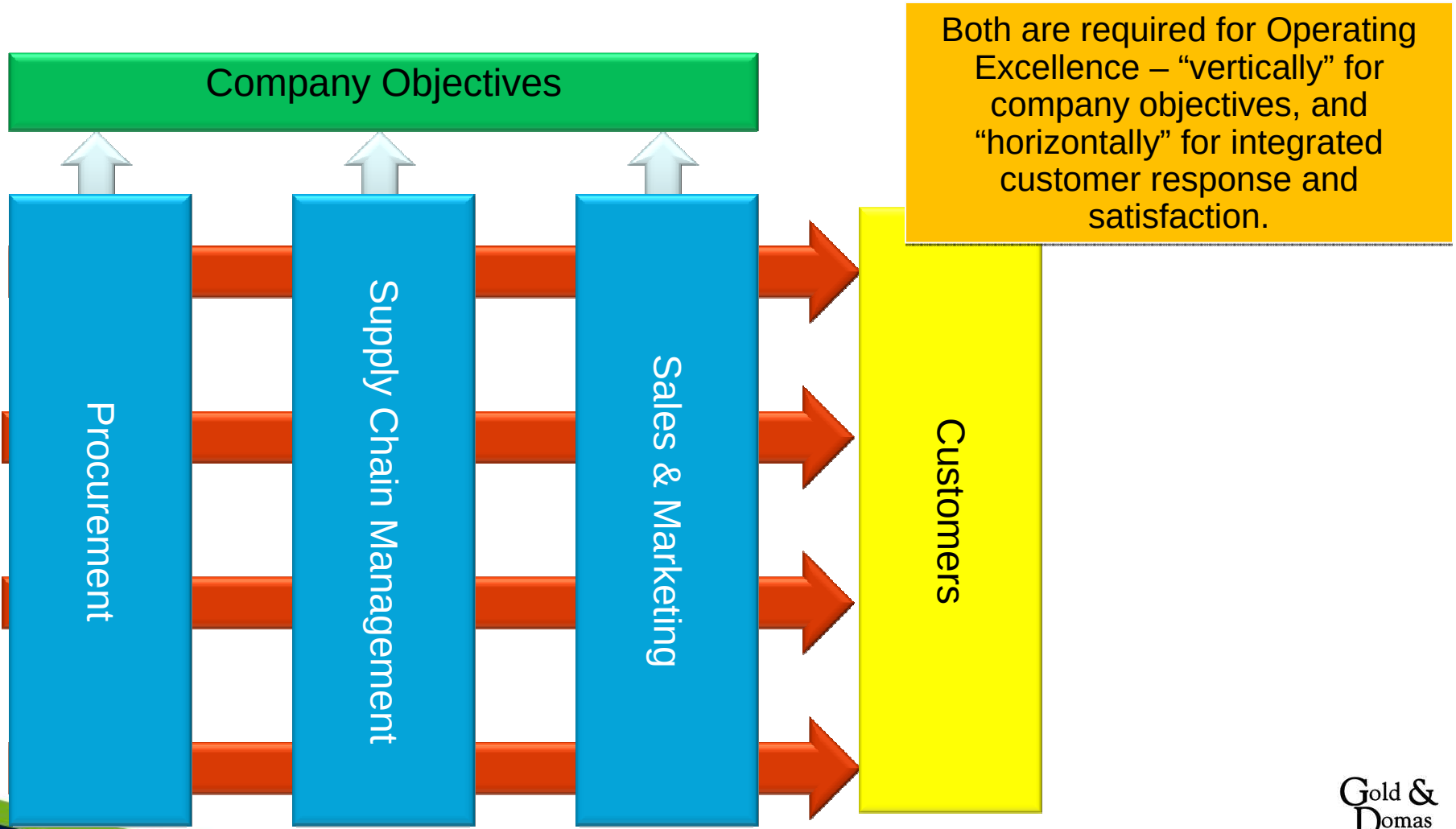
Today, Cross Process Collaboration is Required



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Process Alignment and Integration is the Game Changer

- Vertical alignment assures that process goals reflect the organization's strategic goals
- By aligning strategy, process, technology and implementation, the organization is better positioned to assure that everyone is working to achieve common objectives
- At the same time, if change is required, vertical alignment makes it easier to identify exactly what needs to be changed to refocus on new objectives.
- Horizontal alignment makes sure that customers' needs are integrated and focused across organizations.
- As customer requirements change, horizontal integration also makes it easier to identify exactly what needs to be changed to refocus on new objectives.
- Both must be achieved simultaneously

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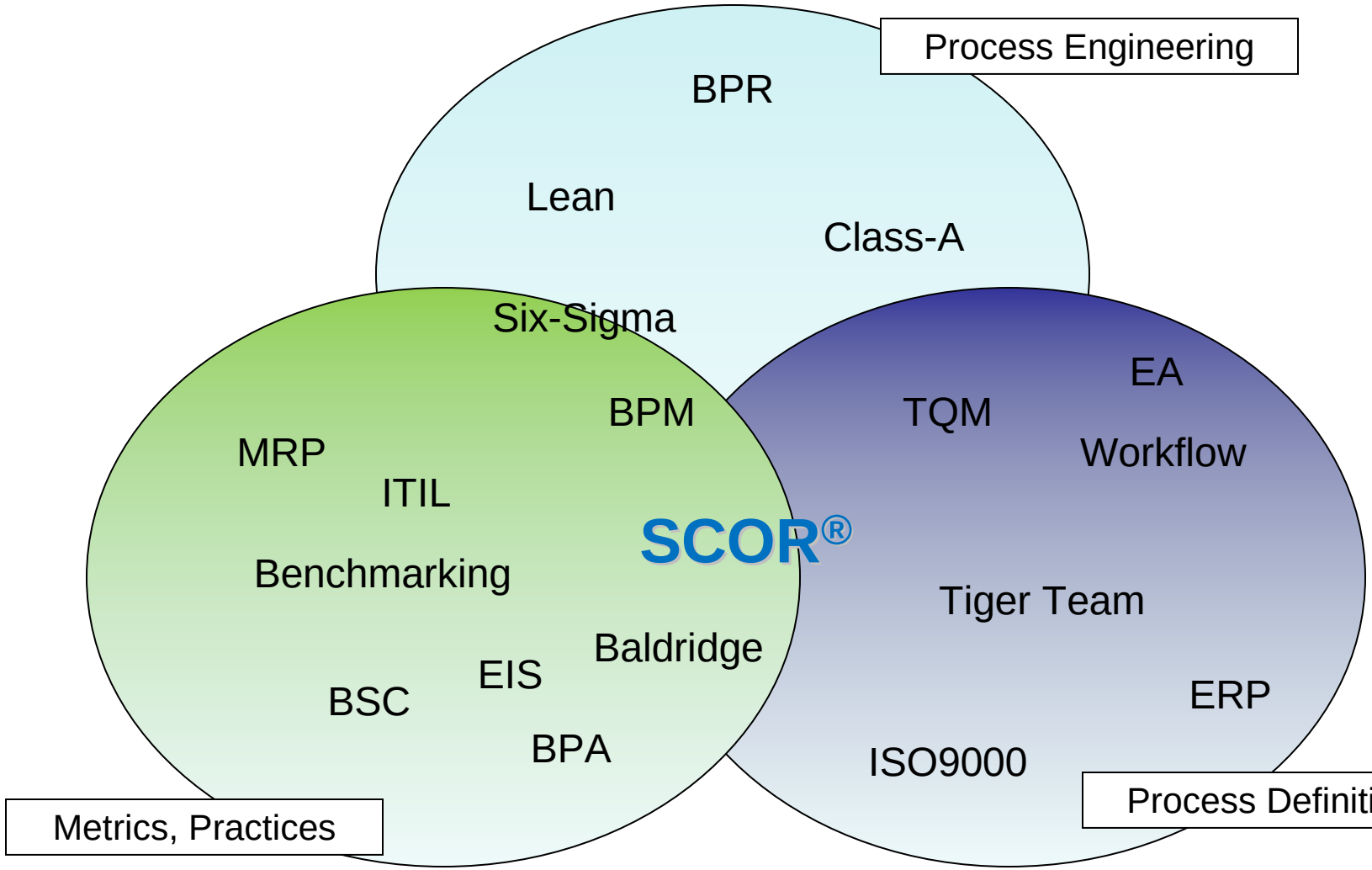
A Spectrum of Approaches



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THE ROLE OF THE SCOR® MODEL IN OPTIMIZING SUPPLY CHAIN PERFORMANCE

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Lean Six Sigma SCOR Strategic Objectives

Respond to Mix and Volume Daily

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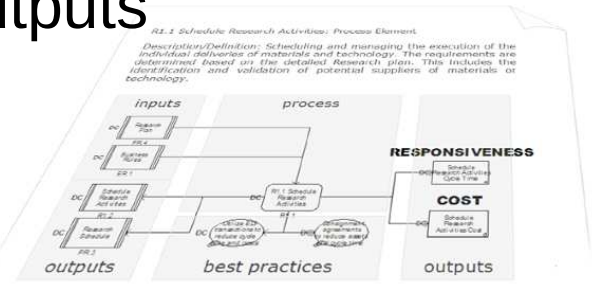
SCOR® : A Process Framework

- Process frameworks deliver the well-known concepts of business process reengineering, benchmarking, and best practices into a cross-functional framework
  - **Standard processes**: Plan, Source, Make, Deliver, Return, Enable
  - **Standard metrics**: Perfect Order Fulfillment, Cash-to-Cash Cycle Time, Cost of Goods Sold, Order Fulfillment Cycle Time, etcetera
  - **Standard practices**: EDI, CPFR, Cross-Training, Sales & Operations Planning, etc.
- Pre-defined relationships between processes, metrics and practices and inputs and outputs



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5 Principles of Lean

- Specify Value
- Identify the Value Stream
- Make Value Flow
- Let Customers Pull
- Pursue Perfection

6σ DMAIC Vision

- D = Define (process)
- M = Measure (metrics)
- A = Analyze (root cause)
- I = Improve (best practice)
- C = Control (benchmark)

Key Elements Across All Lean Six Sigma SCOR Methods

- Voice of the Customer – Understand Demand
- Defining and Managing the Value Stream
- TAKT Driven Process Design
  - Synchronize Rate of Production to Rate of Sale
- Power of Pull – Eliminate Waste
- Control and Improvement
- Managing Lean Six Sigma SCOR
  - Vision and ROI
  - People and Teams
  - Process – DMAIC with Skills and Tools

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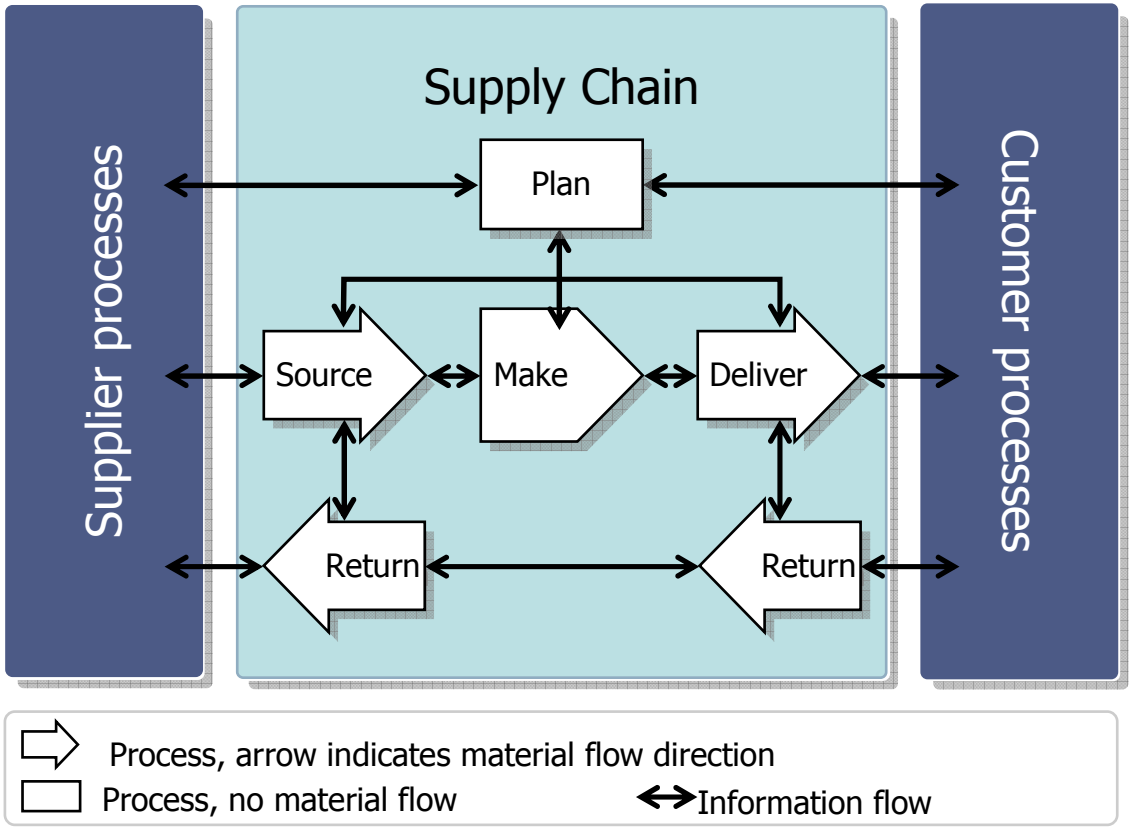
What is SCOR®?

- SCOR is a supply chain process reference model containing over 200 **process elements**, 550 **metrics**, and 500 **best practices** including risk and environmental management
- Organized around the **five primary management processes** of Plan, Source, Make, Deliver and Return
- Developed by the industry for use as **a cross industry open standard** - Any interested organization can participate in its continual development



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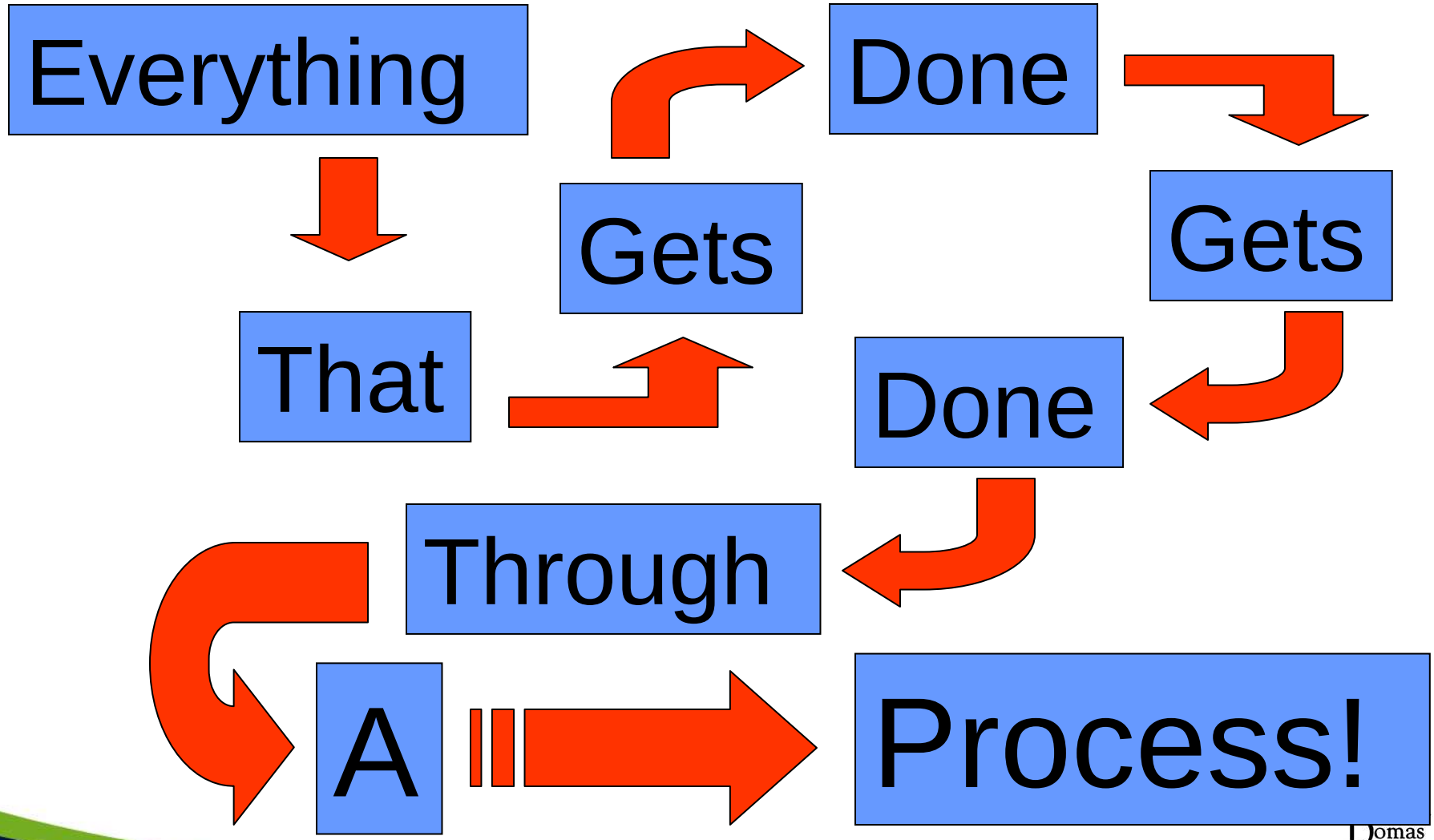
Mapping Business Processes



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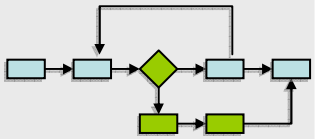
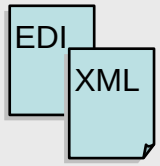
SCOR Processes – Five Levels of Decomposition

Level 1	Level 2	Level 3	Level 4	Level 5
Scope	Configuration	Activity	Workflow	Transactions
Supply-Chain Source	S1 Source Stocked Product	S1.2 Receive Product		
Differentiates Business	Differentiates Complexity	Names Tasks	Sequences Steps	Links Transactions
Defines Scope	Differentiates Capabilities	Links, Metrics, Tasks and Practices	Job Details	Details of Automation
Sets Strategy	First Tier Diagnostics	Second Tier Diagnostics	Industry or Company Specific	Technology Specific

Standard SCOR definitions

Company/Industry definitions

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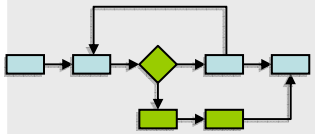
Maps to Organization Structure

Level 1	Level 2	Level 3	Level 4	Level 5
Scope	Configuration	Activity	Workflow	Transactions
Supply-Chain Source	S1 Source Stocked Product	S1.2 Receive Product		
CxO EvP, SVP	SVP VP	VP, Director Line Manager	Manager Team Lead	Team Lead Individuals
Strategic Decision-Making	Line of Business Management	Activities Management	Job Management	Transaction Management
Enterprise Supply-Chain Requirements	Operations Strategy	Fine-Tuning Operations	Adjusting Process Performance	Tuning Technology Performance

Standard SCOR® program

Company/Industry implementation

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Best Practices

Best practice: "*A current, structured, proven and repeatable method for making a positive impact on desired operational results*."

- **Current**
  Must not be emerging and can not be antiquated
- **Structured**
  Has clearly stated Goal, Scope, Process, and Procedure
- **Proven**
  Success has been demonstrated in a working environment and can be linked to key metrics
- **Repeatable**
  The practice has been proven in multiple environments.

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P1 Plan Supply Chain

Metrics
Cash-to-Cash Cycle Time
Cost to Plan SC
Order Fulfillment Cycle Time
Plan Cycle Time
Return on SC Fixed Assets
Return on Working Capital

Best Practices
Capability to run What-if simulations
Change in Demand signal instantaneously “reconfigures” Production and Supply Plans
CPFR
On-line visibility of demand
Re-balancing on full-stream supply and demand
Supply/Demand Processes are fully integrated
S&OP
Tools support balanced decision making
VMI

SCOR® Performance Metrics – Maps the Impact of Specific Activities on Each Key Supply Chain Metric

Standard Strategic (Level 1) Metrics

	Attribute	Metric (Strategic)
Customer	Reliability	Perfect Order Fulfillment
	Responsiveness	Order Fulfillment Cycle Time
	Agility	Supply Chain Flexibility
		Supply Chain Adaptability†
Internal	Cost	Supply Chain Management Cost
		Cost of Goods Sold
	Assets	Cash-to-Cash Cycle Time
		Return on Supply Chain Fixed Assets
		Return on Working Capital

† upside and downside adaptability metrics

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SCOR®: CASE IN POINT

ADVA Optical Networking

The Challenge

- €370.2M Revenue Enterprise[1]
- Rapid growth in demand for storage, voice & data transport
- Focus on capturing this growth while maintaining profitability
- Needed to identify inventory drivers and optimize inventory levels to enable ADVA to reach inventory reduction targets whilst improving customer satisfaction in Order Fulfillment Cycle Time (OFCT) and On-time Delivery (OTD)
- Created a transformation plan that would allow ADVA to proactively plan, drive and manage the inventory levels and better achieve the balance of cost and service

ADVA™ Optical Networking

[1]Hoovers.com

The Solution

- Using SCOR, ADVA identified performance gaps in key metrics between current and required to reach parity status
- Also using SCOR, identified process disconnects, drivers of inventory and projects required for improvement
- Grouped and prioritized proposed projects based on potential impact and amount of effort/risk
- Agreed to project list including:
  - New S&OP Process
  - Supplier scorecards and quarterly business reviews with suppliers,
  - Information transparency and others

Benefits Achieved

- Gross inventory reduced from €59 million to €38 million in 10 months
- Inventory days of supply reduced 47% from initial scorecard

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Core Value[1]

- Improvement of operating results of an average of 3% in the initial SCOR implementation phase by means of cost reduction and improvement in customer services
- Increase in profitability (between 2x and 6x) with regards to project investments costs within first 12 months of implementation
- Reduction in IT costs through minimizing system customization and making better use of standard functionality
- Continuous actualization of process change portfolio by continuous conversion of Supply Chain improvements with the objective of increasing annual profits by 1% to 3%

[1]Poluha (2007) *Application of the SCOR Model in Supply Chain Management* New York, USA

Douglas Pharmaceuticals Limited

The Challenge

- Significant growth from 2003 to 2007
  - 300% increase in new product development
  - 122% growth in production volume
  - 61% growth in employees
- Created the “perfect storm” of supply chain issues
- Converted to new ERP in August 2006
- “Burning Platform”:
  - Customer DIFOT (Export) Down to 20%
  - Product Lead Times Up to 8 months
  - New Product Introduction Lead Times Up to 9 months
  - Stock Turns Down to 2.1x
  - YTD Sales Down 30%
- Available Spare Capacity Unknown
- Customer complaints impact new licensing opportunities and future earnings growth
- Impact on 2007/8 earnings and shareholder value:
  - EBIT (15.9%)
  - Enterprise Value ($25.2M)

The Solution

- “Turning point” for organization – DIY not always best
- Board mandated review at its April 2007 meeting
- Process established to evaluate options
- SCE program initiated using SCOR
- 17 week SCE program between May and September 2007

douglas

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Douglas Pharmaceuticals Limited – continued

The Solution

- Benchmarking and Defect Analysis:
  - Established emphasis on reliability and supply chain cost
  - Confirmed size and relative importance of current performance gaps
  - Provided early direction on root causes
  - Generated basis for calculating opportunity cost
  - Created immediate visibility over supply chain performance
  - Built confidence to move onto Phase Two
- 24 problem areas impacting reliability and COG
- Portfolio of 50 improvements addressed key problem areas
- "Drive Chain" now forms basis of an enterprise wide transformation program

Benefits Achieved

Metric	Improvement
Sales per employee	20%
COGS %	10%
Inventory days of supply	20%
Cash to cash cycle (days)	15%
Shareholder returns	$4.1 million IRR 300% EV Uplift= $12.1m

Typical Potential Improvements[1]

Area	Improvement
Raw materials purchase cost	25%
Cost of Distribution	35%
Total resource deployed	50%
Manufacturing space	50%
Investment in Tooling	50%
Order cycle time	60%
New product development cycle	60%
Inventory	70%
Paperwork and Documentation	80%
Quality Defects	100%

[1]Hughes & Michels (1998) *Transform your supply chain. Releasing value in business.* London, UK

SAAB AB

Challenge

- US$3.1B Aerospace Technology Enterprise[1]
- Three strategic business segments: aeronautics, defense and security solutions, systems and products
- Challenged to execute profitable *and* customer adapted logistics intensive businesses
  - The degree of coordination of logistics operations highly impact Saabs cost level for logistics
  - Coordination enables CEL processes to ensure delivery to customers demands
- Needed to build competitive operations, planning, logistics, and support
- To do so, wanted to move to a full lifecycle-based support concept

The Saab Common Solution

- One backbone system (today based on ERP and/or Best of Breed)
- Cross-functional collaboration and common trust
- Increased Interoperability
- Align SCM Strategy with Corporate Strategy
- Key Enablers
  - Common Supply Chain Frameworks and Roadmaps
  - Standardization
  - Codification
  - Information Systems

[1]Hoovers.com

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SAAB Coordinated Effective Logistics (CEL)

Solution

- Step by step approach - no “big bang”
- Multiple supply chains and methods
- Lack of structured methods and processes
- Knowledge tied to individuals
- Lack of information sharing

- Use of the SCOR model
  - Common definitions and process mapping
  - Sustainable and structured methodology being used as framework for realization of all logistics and SCM activities within Project CEL throughout all of its phases; from cradle to the grave
- Project management
- Change management
- Engineering technique

Benefits Achieved

- Creating a Saab Common Logistics and Supply Chain Management Framework
  - Delivering incremental capabilities
  - Using SCOR Methodology, Processes and Metrics hierarchy
- Initial business cases have identified savings of 73 FTEs and a total of US$15M

Raytheon IDS

The Challenge

- US$4.7B subdivision of US$23.1B Defense Services Provider[1]
- Rapid growth but antiquated processes and procurement focus in supply chain left IDS facing non-competitive operating costs
- No skills within existing team to background and skills for transformational change required

The Solution

- SCOR/Six-Sigma program assessing all supply chain processes within IDS, with focus all SCOR process areas
- 8550 people within Raytheon IDS, and 7600 supplier partners went through transformation for accomplishing five key challenges:
  - Improving world-class performance
  - Connecting every employee to the business
  - Creating purposeful, collaborative partnerships
  - Accelerating top-line, double-digit growth
  - Achieving predictable, best-in-class bottom-line performance

Raytheon

Benefits Achieved

- 37 Percent reduction in headcount but increase of college-educated population to 66%
- 75% reduction in transactional processing for material acquisition
- 25% improvement in SC Cost-to-Sales
- $57M in bottom-line savings
- 98% supplier conformance to contract

[1]Hoovers.com

Comparative Data[1]

Improvement Area	Range
Delivery performance	16% - 28%
Inventory Cost Reduction	25% - 60%
Reduction in order fulfillment cycle time	30% - 50%
Improvement to forecast accuracy	25% - 80%
Increase in overall productivity	10% - 16%
Lower supply chain costs	25% - 50%
Improvement of fill rates	20% - 30%
Improved capacity realization	10% - 20%

[1]Stephens (2000) *1997 Comparative Study* Pittsburg, USA

SASOL Supply Chain Optimization

The Challenge

- US$16B annual South African Petrochemical Concern [1]
- Embarked on Supply Chain Optimization to identify synergies and improvement opportunities across multiple business units
- Complex changing political environment and introduction of substantial Managerial class without deep experience

[1]Hoovers.com

The Solution

- The SASOL Supply Chain Optimization Journey
- Awareness – identified SCOR as a tool (2004)
- Embarked on SCOR pilot project – tackling problem area to show benefits and understand process
- First in-house project (to build internal success)
- Approval for permanent Center of Excellence (CoE) competency
- Prioritization of supply chain projects (project demand exceeds supply)
- Project 2, 3, 4…..X
- Embraced “The SCOR Way” (2007)

Benefits Achieved

- Ongoing CoE for supply chain optimization
- Sample project generated IRR of 139% over the project lifetime
- Estimated US$1B cost improvements over 3 year period

A "Game Plan" for Transformation

Why Should We Change?

- Assess Current Operations – Set Objectives
- Determine Market Benchmarks, Environment & Challenges

How Do We Change?

- Create Strategy and "Vision" for the Future
- Map "As Is" & "To Be" Business Processes & Systems

What is the Value of Changing?

- Determine Critical Success Factors & "Windows of Opportunity"
- Calculate Return on Investment

Getting Management Buy In & Investment

- Present "Solution" Plan to Management

Getting Operations Buy In & Commitment

- Pilot Implementation "Proof of Concept"… Rapid Results

Everyone Jumps on the Band Wagon

- Deploy Transformation Plan Across the Enterprise

The World is Flat: Companies that leverage technology and the SCC's Resources to connect & collaborate will lead the 21st Century!

PD2

Thank You!

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a visioneering company

- industry & market research
- event speaking/keynote
- strategic advisory services
- training seminars and workshops
- supply chain strategy & analysis
- enterprise IT strategy/assessment/selection
- SAP APO Implementation
- marketing strategy & services

Rich Sherman, President

Email: rsherman@goldanddomas.com

Phone: +1 512-266-9041

Slide 48

PD2 As with all labels in this template, please replace these with your own. i.e.:

Manufacturing company

2,000 employess

Offices in 23 states

Conservative with respect to technology; low tolerance for risk
Paul Desmond, 9/28/2006

THE SUPPLY CHAIN COUNCIL (SCC) - A RESOURCE FOR SUPPLY CHAIN EXCELLENCE

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Supply-Chain Council

SUPPLY CHAIN COUNCIL, INC.

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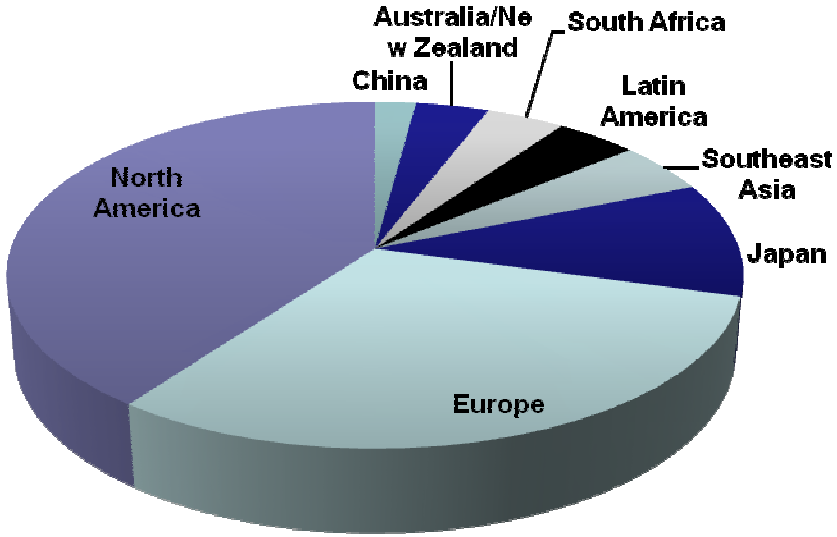
SCOR® Supply-Chain Council

SCC: An independent, non-profit global association

- Formed in 1996 to **create and evolve a standard industry process reference model** of the supply chain for the benefit of helping companies rapidly and dramatically improve supply chain operations
- SCC has established the supply chain world's most widely accepted framework – the SCOR® process reference model – for **evaluating and comparing supply chain activities and their performance**
  - It can be used to describe supply chains that are very simple or very complex using a common set of definitions and enabling a common understanding
  - It lets companies quickly determine and compare the performance of supply chain and related operations within their company or against other companies
- SCC **continually advances its tools and educates members** about how companies are capitalizing on those tools
  - With membership open to all interested organizations

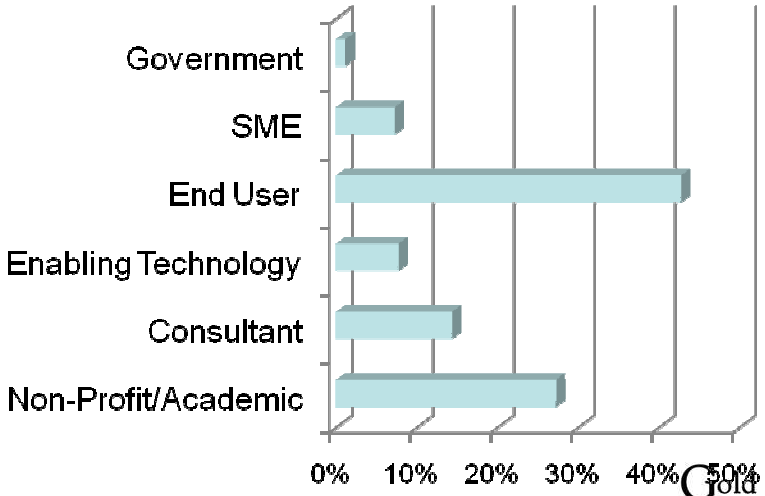
Global Scope With Over 800 Member Organizations

Member Distribution



Also developing chapters in India and the Middle East

Member Affiliation



Gold & Domas Research

Supply-Chain Council

SCC membership accelerates a company's use of –and benefits from – SCOR and related models

Reference models, benchmarking, tools research and help from SCOR experts

Training, certification, career development and volunteer opportunities

Chapters, events and forums to share SCOR and supply chain knowledge and experience

Gold & Domas Research

Supply-Chain Council

Member benefits – Resources

SCOR	A supply chain process reference model containing over 200 process elements, 550 metrics, and 500 best practices including risk and environmental management
Related Frameworks	Additional process reference models such as CCOR (customer chain) and DCOR (design chain)
SCORmark	Benchmarking of supply chain performance against industry peers
Research	Ongoing research on supply chain processes, practices, metrics and skills both globally and by industry and geographic region
Tools	Templates, website, software and methods developed and contributed by volunteer SCC working groups as well academics and third party providers
Publications	Case studies, articles, conference proceedings and newsletters
Expert Network	Access to staff, trainers and advisors to coach individuals and teams in use of SCOR

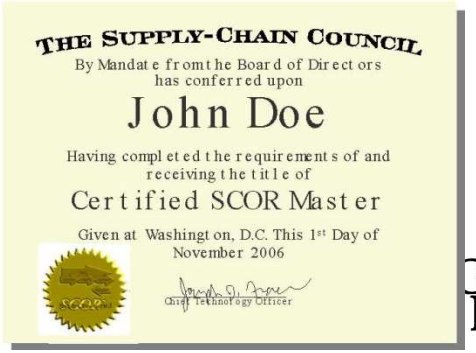
Member benefits – Capability Development

Training — Public and in-house training courses on the SCOR framework, its implementation, CCOR and DCOR models and more

Certification — Individual professional certification on understanding of, and ability to use, the SCOR model

Volunteering — Participation on committees and working groups to develop new models, tools and practices in supply chain management

Career Development — Skills identification, career path identification, online job postings of positions requiring SCOR knowledge, and in-person member networking opportunities


THE SUPPLY-CHAIN COUNCIL
By Mandate from the Board of Directors has conferred upon
John Doe
Having completed the requirements of and receiving the title of
Certified SCOR Master
Given at Washington, D.C. This 1st Day of November 2006
Chief Technology Officer

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Member benefits – Knowledge Networks

Chapters Chapter meetings, networks and materials in local languages discussing supply chain issues of greatest regional interest

Events Frequent webinars and annual regional conferences such as Supply-Chain World

Forums Virtual and in-person discussion forums for networking and problem-solving among communities of common interest (such as industry special interest groups)

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