

NDIA – 19th Annual National Logistics Conference & Exhibition “Logistics...Enabling the Mission”

Partnering for Success – A Focus on International
Partnerships and Coalition Operations

March 06, 2003 — New Orleans

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Booz Allen Hamilton operates two complementary businesses

BOOZ ALLEN HAMILTON

Founded 1914 • Private Company • \$1.7 Billion in Annual Sales

WORLDWIDE TECHNOLOGY BUSINESS

- Communications
- Defense
- Environment
- Information Systems
- Management Sciences
- Intelligence
- Space
- Systems Engineering
- Transportation



11,000 Employees
107 Offices on 6 Continents

WORLDWIDE COMMERCIAL BUSINESS

- Automotive
- Aerospace & Defense
- Consumer Products
- Energy & Utilities
- Global Transportation
- Health Care
- Financial Services
- Media
- Technology
- Telecommunications

Each businesses has a service offering tailored to its market

Worldwide Technology Business

- ▶ 60 Partners and 10,000 professional staff; about \$1 billion in revenue
- ▶ Helps government agencies, institutions and corporations achieve their missions—by making their missions "our" mission
- ▶ Creates tailored solutions to meet client challenges.
 - Full range of the firm's services
 - Mission definition through operations support
- ▶ Brings to bear
 - Superior understanding of the client's environment
 - Outstanding functional expertise in management, technology and engineering disciplines

Worldwide Commercial Business

- ▶ 170 Partners and 1,000 professional staff; about \$600 million in revenue
- ▶ Works with CEOs and senior executives in large corporations on complex cross-functional problems
- ▶ Assists companies in strategy-based transformation
 - Selecting a new strategic direction
 - Building the organization to make it happen
 - Bringing operations to global best practices
 - Harnessing the power of information technology
- ▶ Deploys small, senior teams working closely with clients
- ▶ Seeks to create value in excess of 20 times fees

But both share an absolute commitment to the same core values

Our performance is measured by the quality of our work, the success of our clients and our reputation for service, objectivity, integrity and results. To every client, we commit the breadth of the firm's professional talent and the depth of its accumulated learning and methods.

Our deep presence in both corporate and government aerospace / defense communities is unique

- ▶ Through WTB, Booz Allen Hamilton is a leader in management and technology consulting to the government aerospace and defense community
 - CONOPs development
 - Requirements development, analysis and management
 - Strategic and Tactical Logistics assessments
 - C4I network planning and integration
 - Military utility analysis
 - Human-in-the-loop experiments
 - Wargaming — designing and coordination of exercises
- ▶ Through WCB, Booz Allen Hamilton is a leader in management and strategy consulting to the aerospace and defense industry, globally
 - Corporate, market and business strategy
 - Organizational & Operational effectiveness
 - Logistics Assessments and business case design
 - Program planning and execution

We integrate skills across these businesses to define and solve complex logistics problems

Booz Allen Hamilton Worldwide Technology Business (WTB)

- ▮ Communications
- ▮ Environment
- ▮ Information Systems
- ▮ Management Sciences
- ▮ **Defense**
- ▮ **Intelligence**
- ▮ **Space**
- ▮ Systems Engineering
- ▮ Transportation



Aerospace / Defense Corporate Capabilities

- ▮ Market / industry knowledge
- ▮ Business strategy skills
- ▮ Economic / financial analysis
- ▮ Business restructuring
- ▮ Change management
- ▮ Operations improvement
- ▮ IT systems strategy

- ▮ Defense domain expertise
- ▮ Specific program expertise
- ▮ Customer understanding
- ▮ Technology expertise
- ▮ Operations / mission analysis



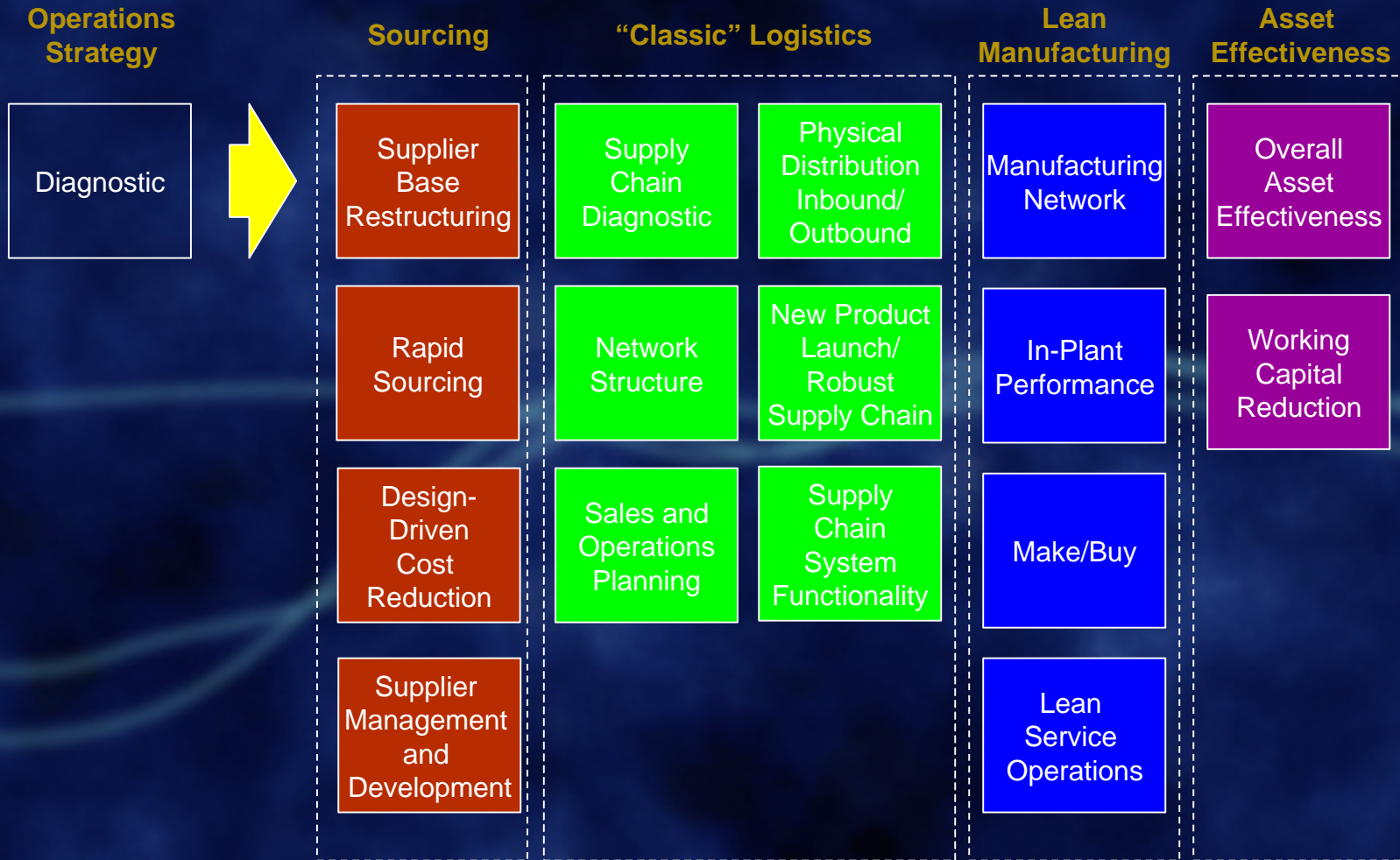
Booz Allen Hamilton Worldwide Commercial Business (WCB)

- ▮ Automotive
- ▮ **Aerospace & Defense**
- ▮ **Global Transportation**
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- ▮ Media
- ▮ Technology
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Our Logistics practice is sizable ...

- ▶ 50 senior partners/ principals worldwide
 - Mix of DoD Domain, Supply Chain, Operations, IT, and Organizational skills
 - Work closely with commercial, government, and defense industry practices to tailor offerings specifically to the clients we serve
 - \$100M per year in supply chain/ Logistics services... and growing
- ▶ Heavily “front end” oriented ...
 - Assess opportunities, build business case, develop strategies, establish conceptual designs, and create the case for change
- ▶ ... but also provide focused, high value implementation support
 - Change management, governance facilitation, and “deep dive” analytics and problem solving
- ▶ Not a systems integrator
 - Knowledgeable on solutions ...
 - ... but maintain package independence

... and broad, a full range of Logistics service offerings



Current examples of our DoD Logistics work

Client	Situation/ Market Environment	Booz Allen Support
U.S. Navy	<ul style="list-style-type: none"> ▶ Poor flow coupled with poor part availability across entire chain for aircraft maintenance ▶ More aircraft needed to meet demanding OPTEMPO 	<ul style="list-style-type: none"> ▶ Detailed dysfunctional linkages in supply chain and imbalance in planning and execution ▶ Tbd; Part of broader SecNav Effectiveness & Efficiency study
Coalition Theatre Logistics	<ul style="list-style-type: none"> ▶ Inability to share accurate logistics information with coalition partners for the full spectrum of military operations 	<ul style="list-style-type: none"> ▶ Providing strategic-level support for through-life management of the CTL-ACTD and developing the CONOPS to transition from ACTD to an operational capability
PACOM	<ul style="list-style-type: none"> ▶ Geographically dispersed command, covering 52% of the world's surface, highlighted by long distances and limited infrastructure. ▶ Readiness of forces to deploy and sustain operations over these distances are key to strategic interests – “tyranny of distance” 	<ul style="list-style-type: none"> ▶ Providing support, design and coordination of exercises, training and other readiness events ▶ Support CIP planning, C4I network planning and integration ▶ Assessment and operational evaluation support

Current examples of our DoD Logistics work

Client	Situation/ Market Environment	Booz Allen Support
Royal Saudi Naval Forces	<ul style="list-style-type: none"> ▶ Inadequate supply chain management due to rapid integration of new systems ▶ Interoperability required with US logistic systems 	<ul style="list-style-type: none"> ▶ Integration assistance to optimize a centralized inventory control point system ▶ Training in process improvement and operations
Egyptian Navy	<ul style="list-style-type: none"> ▶ Logistic base needed complete restructuring to support new systems, establish inventory control, and improve operations 	<ul style="list-style-type: none"> ▶ Supply chain requirements analysis and diagnostics ▶ Process improvement/automation
International Naval Ship Support	<ul style="list-style-type: none"> ▶ Supply chain needed reorientation to support new systems and technology 	<ul style="list-style-type: none"> ▶ Requirements analysis ▶ Improved connectivity with US suppliers to reduce cycle time
Japanese Self Defense Forces	<ul style="list-style-type: none"> ▶ Rapid integration of bilateral communication technology system taxed configuration management processes 	<ul style="list-style-type: none"> ▶ Process improvement recommendations and implementation for configuration management plan/ organization

Current examples of our DoD Logistics work

Client	Situation/ Market Environment	Booz Allen Support
Egyptian Armament Authority	<ul style="list-style-type: none">▶ Lack of supply chain insight and management▶ Poor process for inventory control, accountability, and refurbishment	<ul style="list-style-type: none">▶ Supply chain functional requirements analysis and diagnosis▶ New automated process design and implementation support
PACOM/ Australian Defense Forces	<ul style="list-style-type: none">▶ East Timor peacekeeping operations revealed interoperability challenges in technology and logistics	<ul style="list-style-type: none">▶ Conducted analysis/ diagnosis and identified lessons learned for enhancing interoperability, including logistics
DISA C4I Foreign Military Sales	<ul style="list-style-type: none">▶ Disparate technologies that created system integration issues	<ul style="list-style-type: none">▶ Requirements analysis▶ Tailored process design and implementation

DUSD Future Logistics Enterprise (FLE) guidance ...

- ▶ Focus on “END-to-END” distribution (logistics) as primary enabler to...
- ▶ ... “Provide the war fighter with the right material at the right time to support the continuous combat effectiveness of the deployed force”
- ▶ Outlined a number of disconnects in today’s logistics business models:
 - The “distribution environment is comprised of multiple, unsynchronized, distribution nodes...
 - ... with rescheduling often required at each change of transportation mode”
 - “a myriad of discrete supply chains that are optimized at the item/commodity/customer/mode level but are not harmonized at the enterprise level
 - “contracts for material acquired through purchase card, direct vendor delivery, and weapon system contractors support delivery do not always provide for a smooth transition from peace time to war time”
 - “the sustainment and material distribution process is not well integrated with force deployment flow”

We use a logical and holistic approach for identifying opportunities and optimizing end-to-end networks



- Service criticality
- Demand magnitude
- Demand stability
- Supply reliability
- Cycle times
- Cost profiles

- Mix of:
 - Stable / reliable
 - Configuration or mix variable
 - Custom / low volume

- Mix of:
 - Flow based
 - Synchronous
 - Schedule push
 - Demand pull

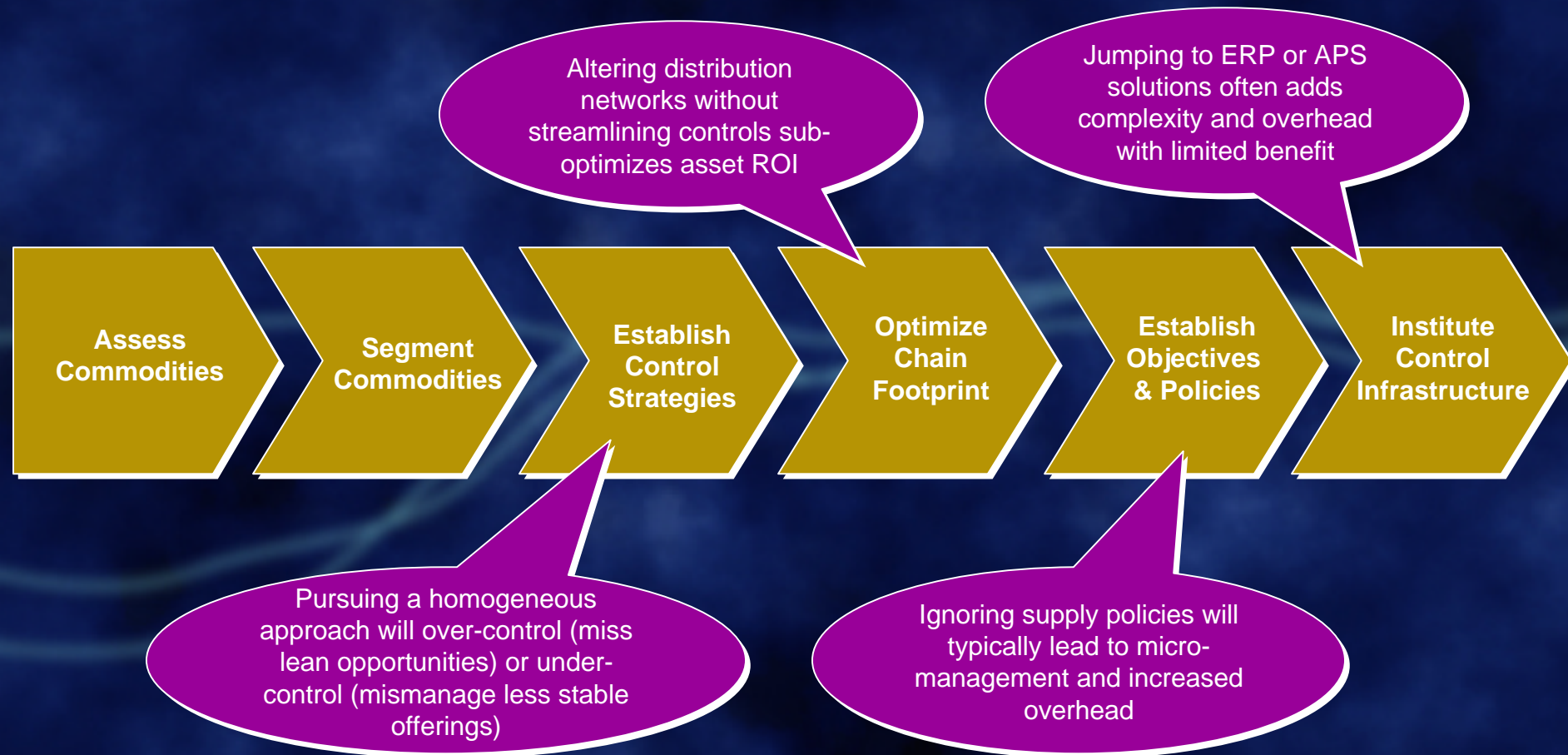
- Transport modes
- Storage points
- Capacities
- Buffer types & locations
- “Push / Pull” cross-over points

- Performance targets:
 - Service levels
 - Inventory levels
 - Cycle time
- Flexibility requirements
- Performance based compensation

- Hierarchical business processes and systems
 - E.g., Sales & Ops Planning
- Organization design

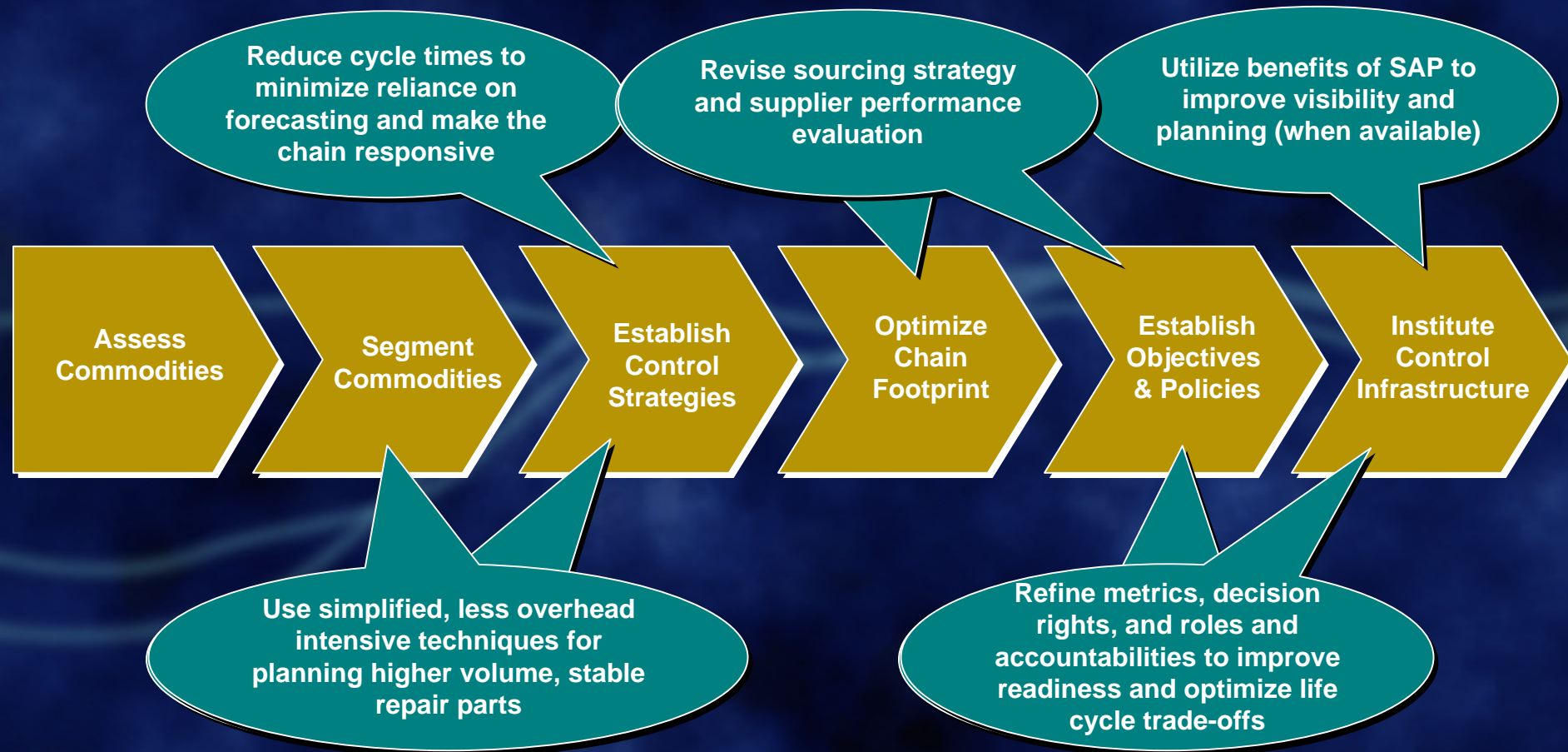
This approach provides the necessary structure to successfully deal with complexity in the supply chain

Focused or non-integrated efforts typically do not deal with complexity and lead to sub-optimization



This end-to-end approach highlighted a number of discontinuities in our recent work with the U.S. Navy

US NAVY SUPPLY CHAIN OPPORTUNITIES



An end-to-end perspective on supply chain improvement can result in dramatic performance increases

HOLISTIC SUPPLY CHAIN TRANSFORMATION RESULTS

Product and Service Affordability

- ▶ 15 - 20% lower initial product costs
- ▶ 4 - 6% year on year cost improvement
- ▶ 30-40% reductions in internal transaction costs

On-time Reliability

- ▶ Delivery reliability of 5-25% absolute improvement in on time to customer request
- ▶ 5x improvement on development projects on time

Asset Base and Working Capital

- ▶ Inventory turns increased by 2-4x
- ▶ ROA improvements from outsourcing non-core capabilities

Quality Performance

- ▶ Quality ppm failures reduced by 2x
- ▶ Ship to point of use increased by 20-30x
- ▶ Inspection costs reduced by 17x



Our work originates from the recognition that functional objectives are frequently in conflict

CONFLICTING FUNCTIONAL OBJECTIVES

FUNCTIONAL OBJECTIVES	Impact of objectives on ...		
	Inventory	Customer Service	Total Costs
	↓	↑	↓
High customer service	↑	↑	↑
Low transportation costs	↑	↓	↓
Low warehousing costs	↓	↓	↓
Reduce inventories	↓	↓	↓
Fast deliveries	↑	↑	↑
Reduced labor costs	↑	↓	↓

DESIRED RESULTS

By commercial standards, today's defense players are functionally organized

Segmentation is critical – one size does not fit all

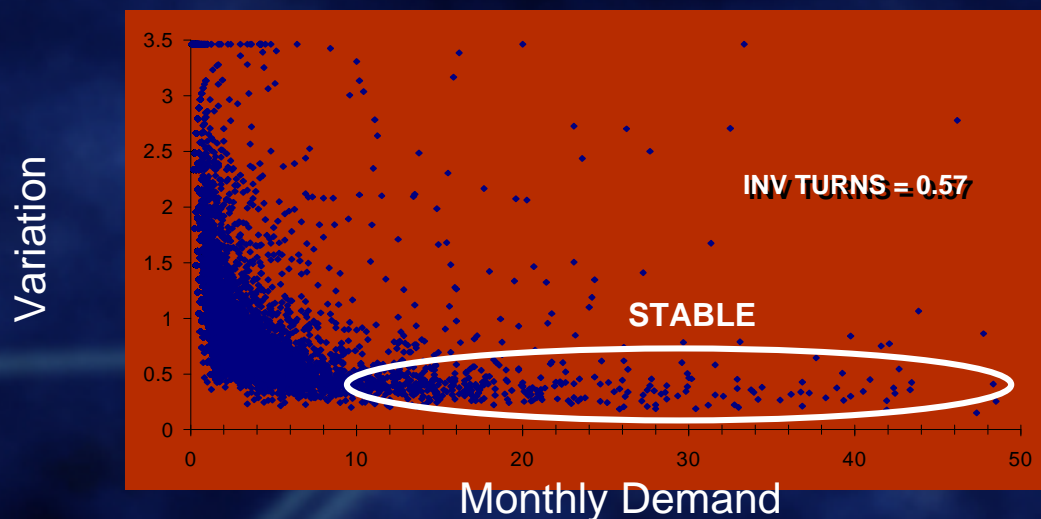
- ▶ Supply chains are optimized by finding the best balance between service levels, management costs, and execution costs
- ▶ These solutions differ across the chain as commodities or commodity / customer combinations have fundamentally different profiles:
 - Items with very stable demand and reliable supply can realize high service levels with very low with minimal planning and execution costs using lean techniques
 - Many items that appear to be variable have stable foundations (e.g., demand for base models or process groups, capacity consumption, demand over longer horizons) – these require schemes that minimize the impact of variation (e.g., late stage configuration)
 - Typically, a limited number of items have highly variable or very low demand and require “build or engineer to order” type schemes

While DoD may focus more on standard products, concepts for segmenting are still applicable and important

- ▶ Therefore, understanding the demand and supply dynamics across commodity sets is critical to designing and operating a tiered, truly optimal solution
- ▶ We refer to this segmentation and subsequent control design processes as Tailored Business Streams (TBS)

For example, we found a significant population of stable items in the Navy demand profiles

AVIATION PARTS FINDINGS —U.S. DEPT OF NAVY



GENERAL MILITARY EXAMPLES

Class I – Food, water
Class IX – Depot Prog
Class V – Ammo
Class VIII – Med
Class IX – Spares

TBS1 – Basic and stable, very predictable demand
TBS2 – Predictable demand that varies between known options or order mix
TBS3 – Highly variable, unpredictable demand driven by exceptions

The preferred control strategy is dictated by the segmentation

Tailored Business Stream

Typical Areas of Focus

Typical Control Strategies

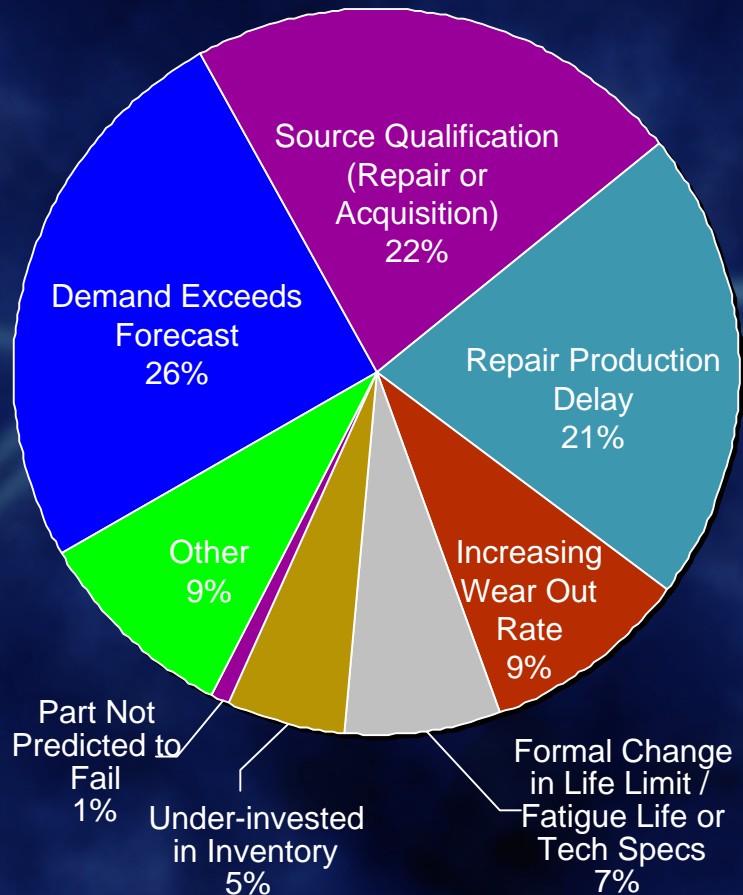


The performance of the current supply “footprint” must be assessed ...

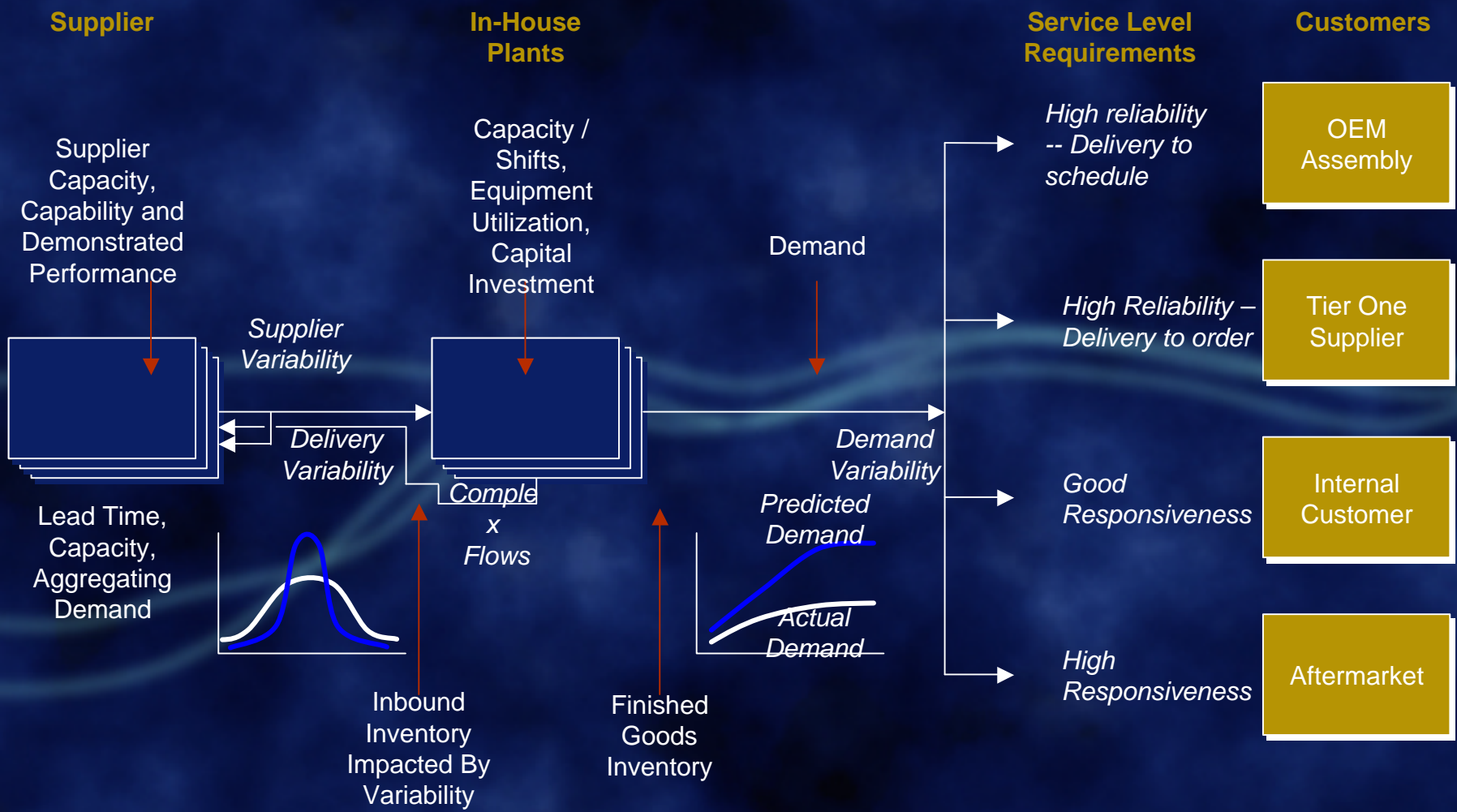
AVIATION BACKORDER ROOT CAUSES⁽¹⁾

Total - \$1,500M

NAVY EXAMPLE



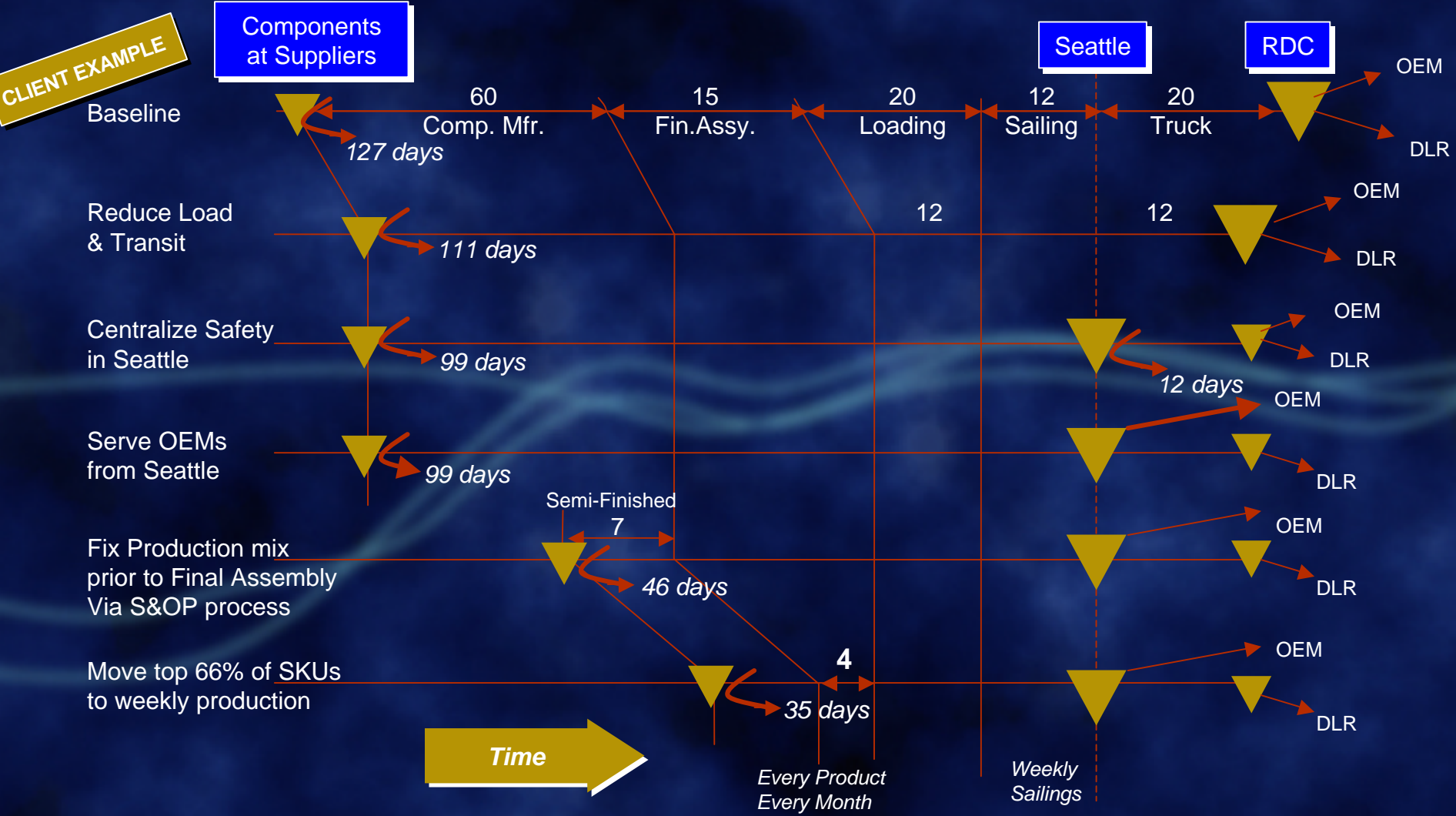
... and alternatives explored to uncover opportunities



A key consideration is often where “crossover points” will be located

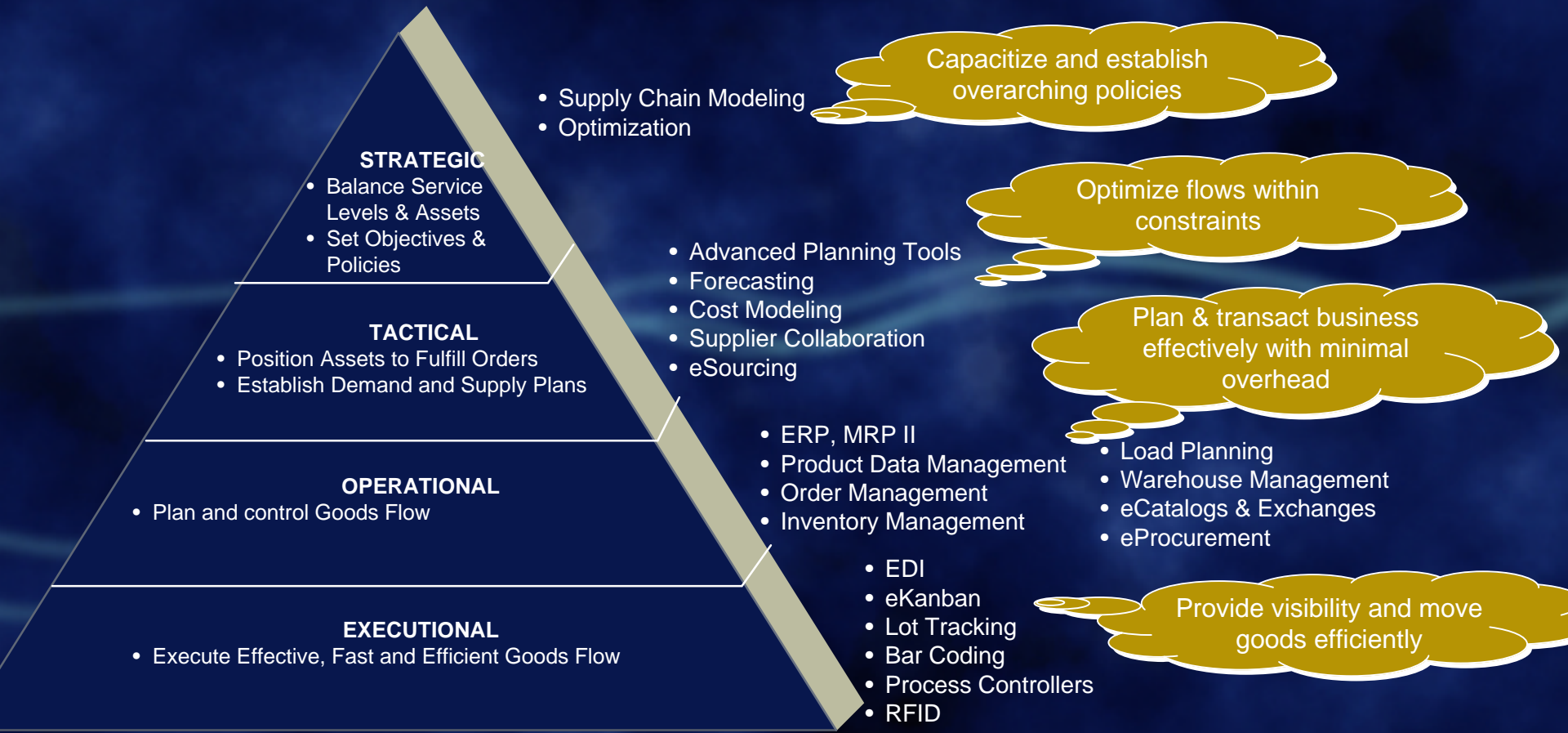
- ▶ In typical logistics chains, the variety of materials and number of SKUs through the supply chain increases as you move downstream
- ▶ Crossovers are points in the chain where we transition from push to forecast to pull to hard order
- ▶ Setting and managing the inventory at crossover points is critical to optimizing the overall performance of the supply chain and maintaining service levels
- ▶ Example: Hewlett Packard Printers: Regional customization
 - Printers originally configured to local requirements at the factory
 - Now printers, sent to DCs as “gray stock”
 - Distribution center provides customization for particular local markets – DC stock as crossover point
 - Provided an 18% reduction in inventories with no reduction in service levels

The results can be dramatic

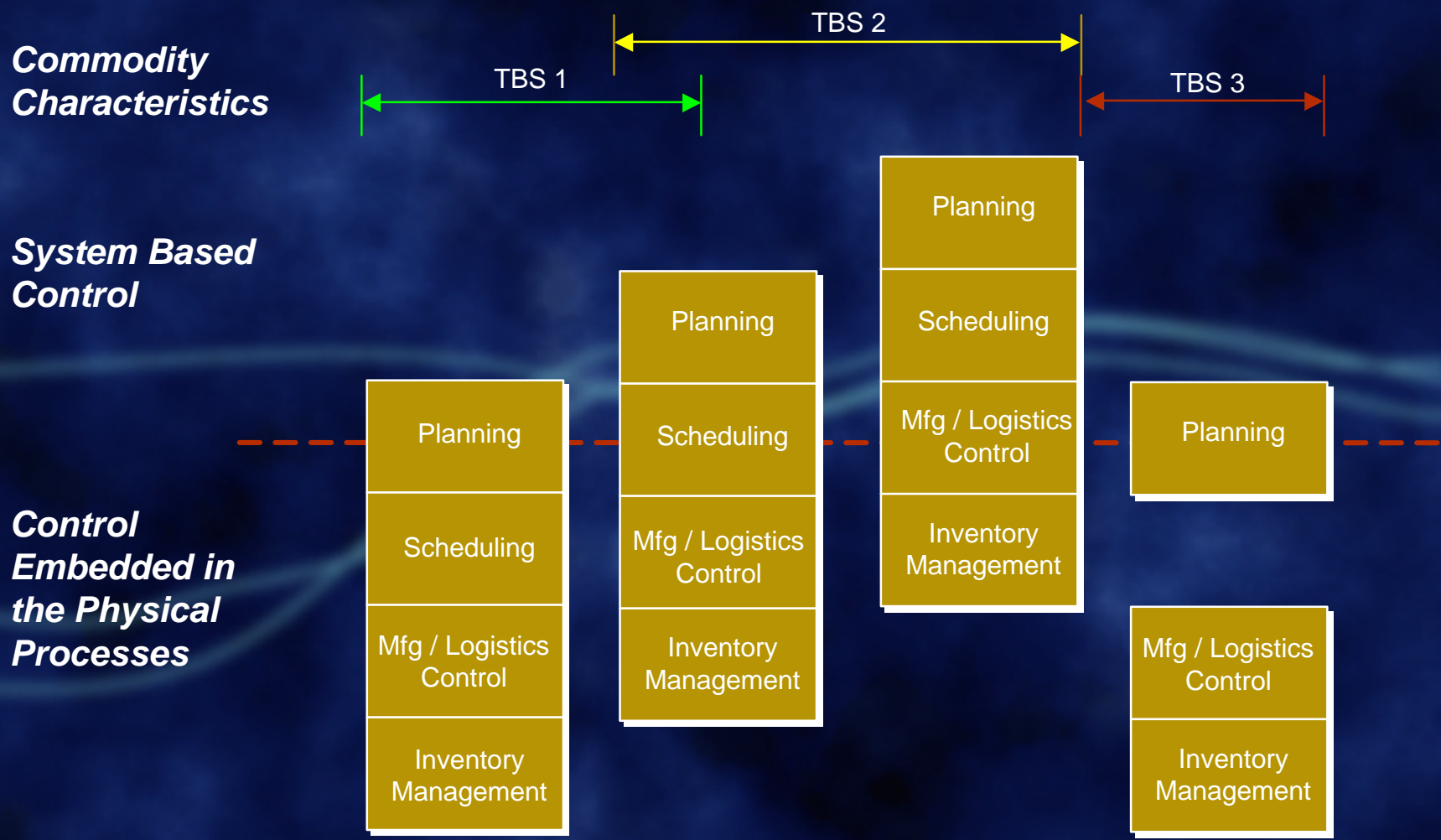


A number of potential supporting systems tools exist

SUPPLY CHAIN MANAGEMENT TOOLS BY TIER



To control costs it is critical to limit complexity and ensure good technology fit to control scheme



We are having success turning commercial logistics best practices into substantial opportunities for DoD

- ▶ The concepts described here apply to a broad range of logistical problems
- ▶ Understanding the essential operating principles and taking a structured approach is key making smart choices for performance improvement in any supply chain environment
- ▶ While there are differences of focus between DoD and commercial supply chains, the differences may be less obvious than expected
 - Efficiency vs. effectiveness trade-offs are not always one-sided in commercial cases
 - Profit is important in industry, but it is only one consideration
- ▶ Our analytical approaches aim squarely at the end-to-end logistics issues
- ▶ Our recent experience within the U.S. Navy confirmed this