

Transforming Logistics



2 December 2003

“Amateurs talk about strategy;
Professionals talk about logistics.”

*former General R.H. Barrows
Commandant, USMC*

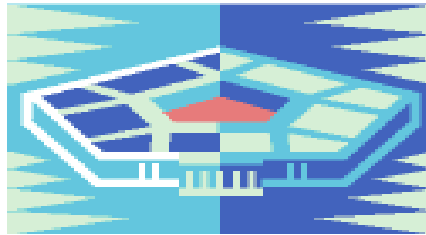
Our History



- Unparalleled industrial capabilities
- Highly trained and motivated workforce
- First fully automated logistics system
- Envied by our allies;
Feared by our adversaries

World class in mass logistics.

Post Cold War



- \$109B in inventory (1989)
- 60-day response time
- 42 Maintenance Depots
- 788M cubic feet of storage space

- \$67B in inventory
- 32-day response time
- 20 Maintenance Depots
- 323M cubic feet of storage space

Ready to Project and Sustain a Smaller “Cold War”

The Changing Game

- **Immediately Employable Force Option**
- **Preemptive Capability**
- **Net-Centric Warfare**
- **Focused Joint Logistics**



Words of Wisdom

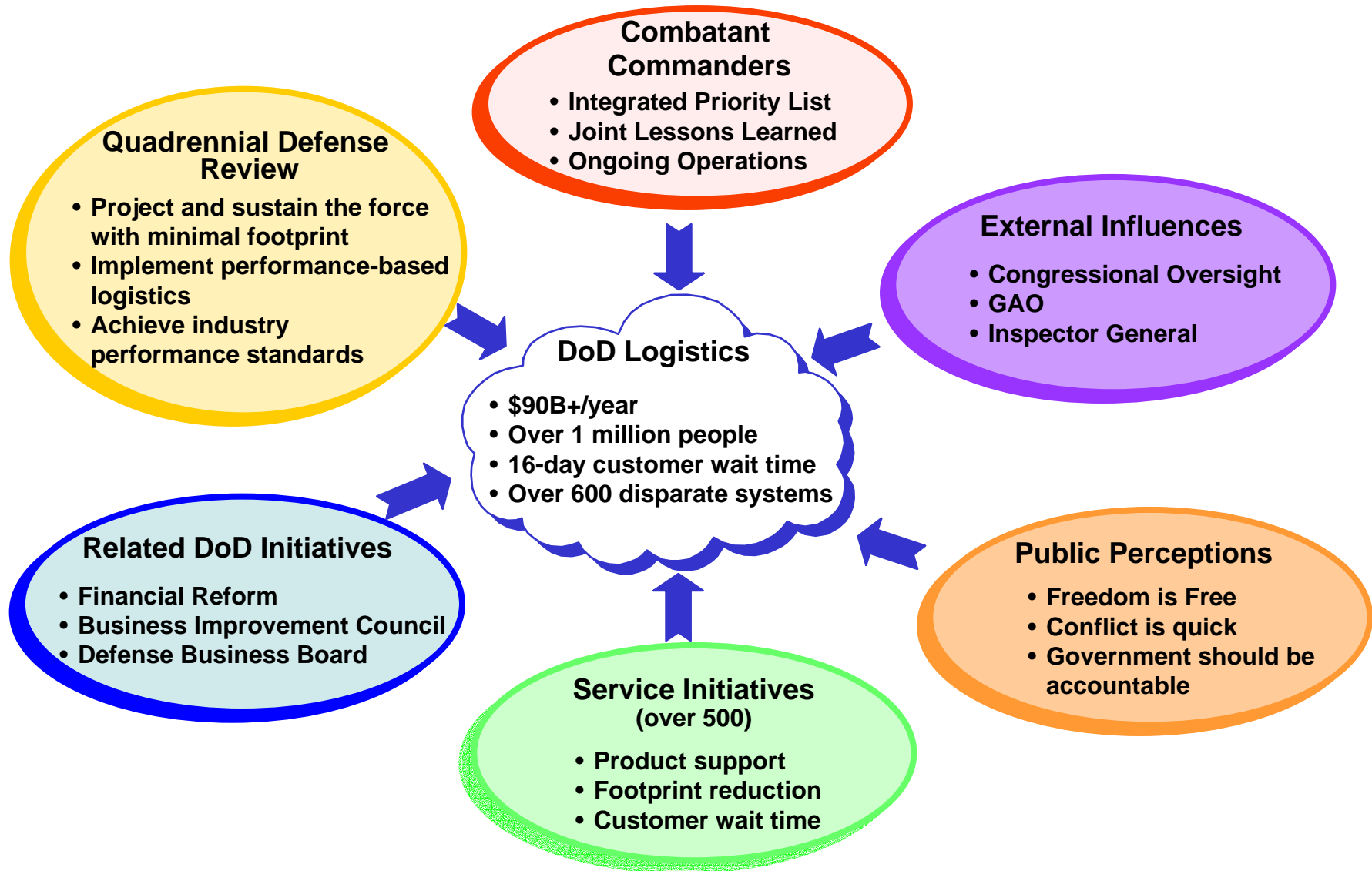


“The dogmas of the quiet past are inadequate to the stormy present. . . As our case is new, so we must think anew, and act anew. *We must disenthral ourselves, and then we shall save our country.*”

Logistics Implications (QDR Direction)

- **Project and sustain the force with minimal footprint**
- **Implement performance-based logistics to improve readiness for major weapon systems and availability of commodities**
- **Reduce cycle times to industry standards**

Our Complex Web



Transforming Logistics

“Little Cold War”

- \$90B/year operating costs
- 80's readiness
- \$67B in inventory
- 16-day CWT
- 788M cubic feet of storage space

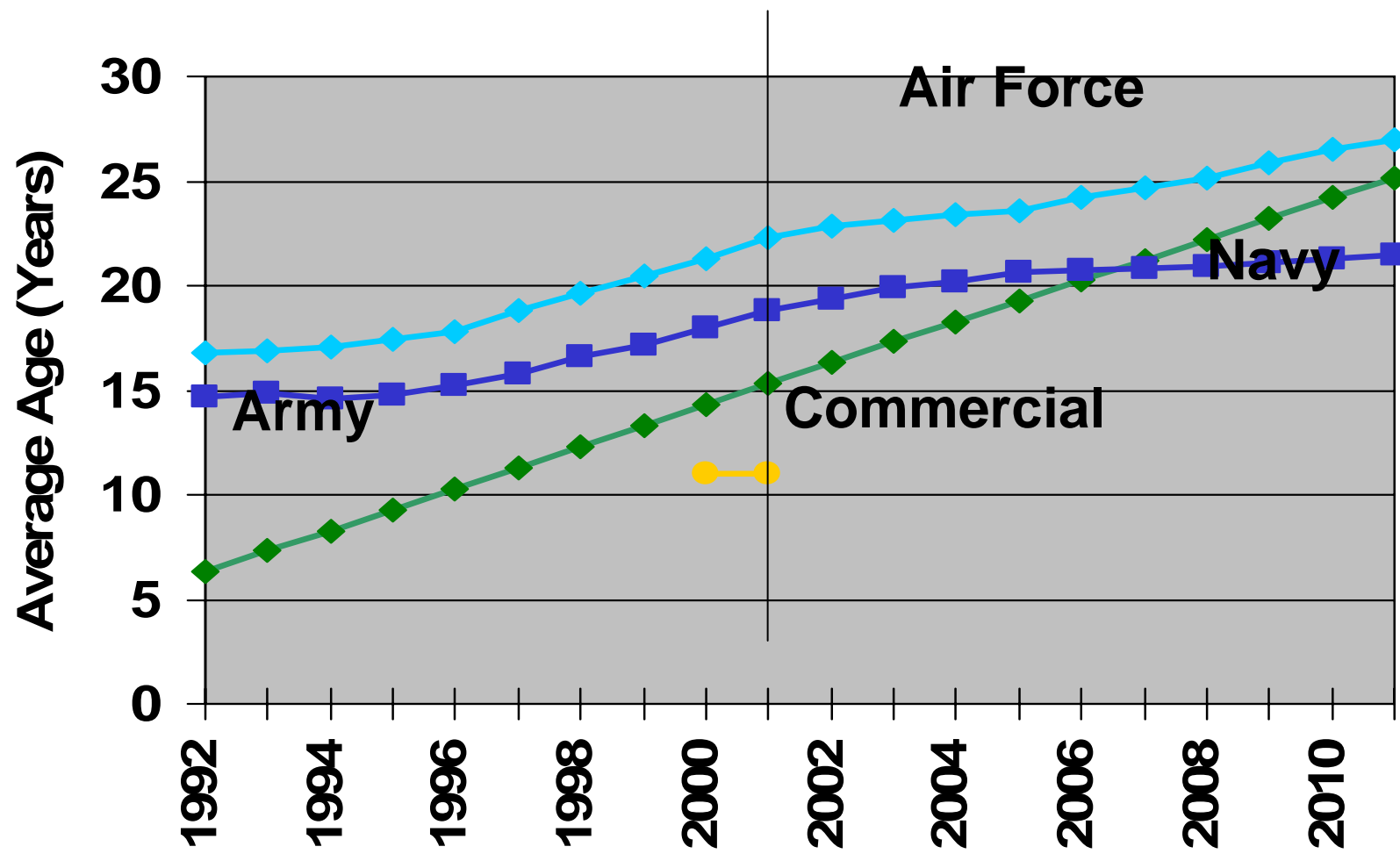
Global War on Terror

- \$70B/year operating costs
- High 90's readiness
- \$50B in inventory
- 2-day reliable delivery
- 300M cubic feet of storage space

Transforming Logistics

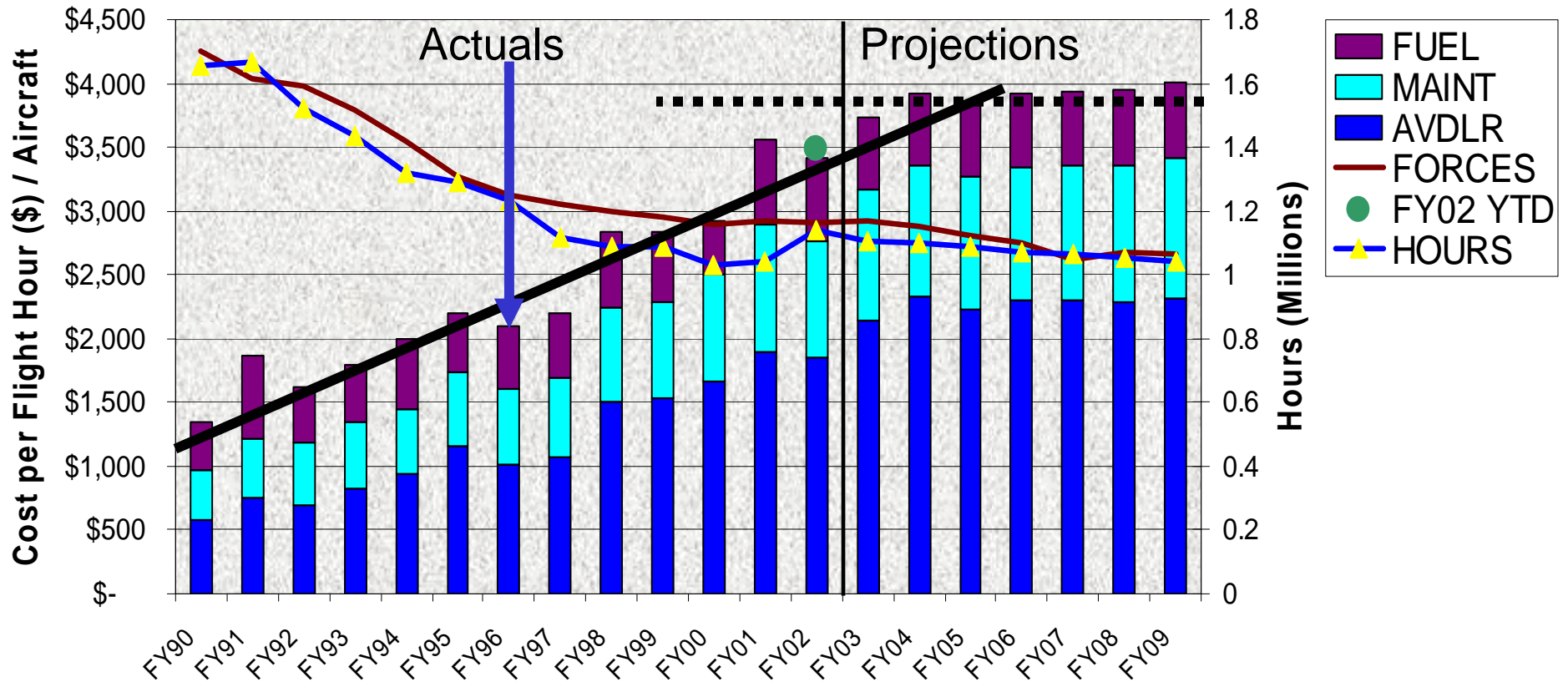
- Reduce immediate risk
 - Increase readiness
- Reengineer the “Pipeline of Freedom”
 - To commercial standards through commercial practices
- Accelerate the “Arsenal of Democracy”
 - Buy our way out

Fleet-Wide Aircraft Age Trend*



* Data based on 2001 figures
Source: *Joint Council on Aging Aircraft*

Cost of Aging Flying Hour Program Costs



Problem: ***We are eating our young!***

Focus on LD/HD Assets: AWACS



Program Management

- Fielded System
- PM as Life Cycle Manager
- Managed to ACC performance expectations
- Synchronized modernization, R-TOC, and PDM
- Invested \$170M in R&M improvements

Recent Results

- Exceeding ACC availability
- Improved depot on-time delivery by 60%
- Increased reliability of key subsystems
- Exceeded 83% MC rate during OIF

Performance Management

- Performance based on ACC requirements
- Organic maintenance and supply support managed through Service-level agreements
- Industry partners incentivized to reduce lead times
- SPD provides program management, configuration control, sustaining engineering

Focus on LD/HD Assets: B-2



Program Management

- Fielded System
- Maintenance Officer as PM
- Managed to ACC performance expectations
- 7-year management goals; 10-year roadmap
- Synchronized modernization, R-TOC, and PDM
- Aggressively managed DMS program

Recent Results

- Exceeding ACC availability
- 50% reduction in MMH/FH (projected)
- Exceeded OIF forward operating base requirements
- Eliminated all LO backlogs
- Accelerated tactical radio secure SATCOM capability
- Achieved 72% MC rate (historical high)

Government/Industry Partnership

- Northrop-Grumman PBL awarded in FY03
- Organic maintenance and supply support (DLA)
- SPD provides program management, configuration control, sustaining engineering

Near-Term: Reengineer to World-Class Standards

- Implement integrated supply chains for weapon systems
- Implement commercial business solutions
- Infuse accountability and performance measurements

Force-centric Logistics Enterprise

Weapon System Support Challenges

Operational Challenges

- Availability of parts
- High maintenance levels
- Retention/turnover of maintenance personnel
- Large maintenance/supply footprint

Structural Challenges

- Equipment designed to 75-85% availability
- Disjointed acquisition and logistics processes and accountability
- \$67B per year in cost; no link to output
- Disjointed, functional support structure
- 16-day CWT for high priority parts
- 50% of cost tied to maintenance; vast majority at O&I level
- Aging organic depot infrastructure

Implications for Transformation

- Will not support rapid force projection
- Large footprint (people and equipment)
- Complex, disjointed logistics chains
- Limited asset visibility

Mid-Term Solutions FLE Initiative

- Total Life Cycle Systems Management
- Performance-Based Logistics
- Depot Partnering
- Conditioned-Based Maintenance +

Integrated strategy to achieve end-to-end accountability for weapon system support that meets transformation goals and requirements.

Future System Sustainment

*Real-Time
System Status
(CBM+)*

Industry/Government



Partnerships

**Performance-
Based Logistics**

**Weapon System
Manager**



Force Provider

**Ensure system is
sustained at optimum
level**

Performance Agreement

Performance Agreement

**Provide continuous,
reliable, affordable
support**

Acquisition



Sustainment

Disposal

Visibility into cost/risk decisions across life cycle

Providing operational availability; not parts.

Army Stryker Vehicle

Integrated Weapon System Status and Health Management

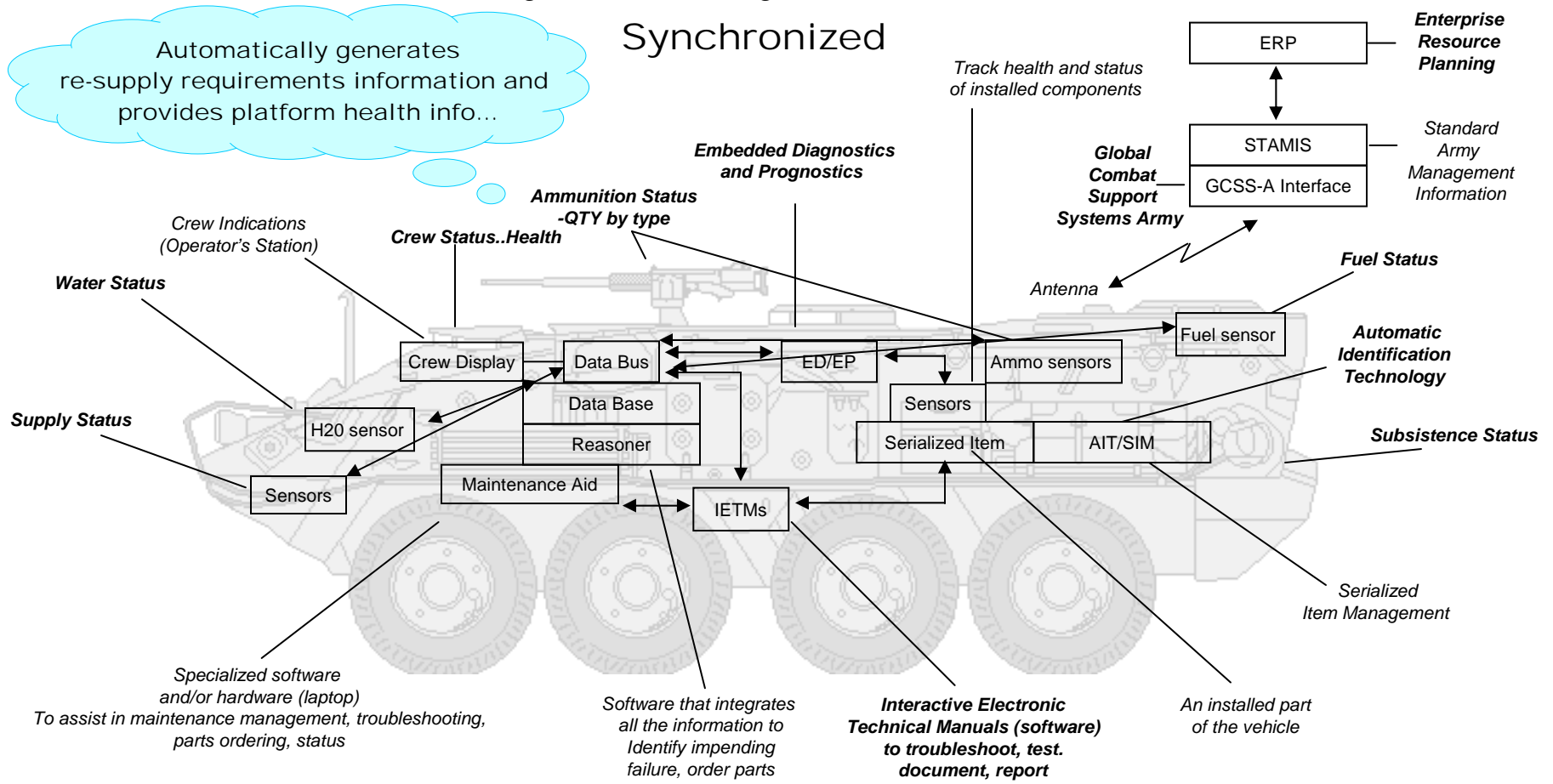
Sensor-Based

Self Monitoring

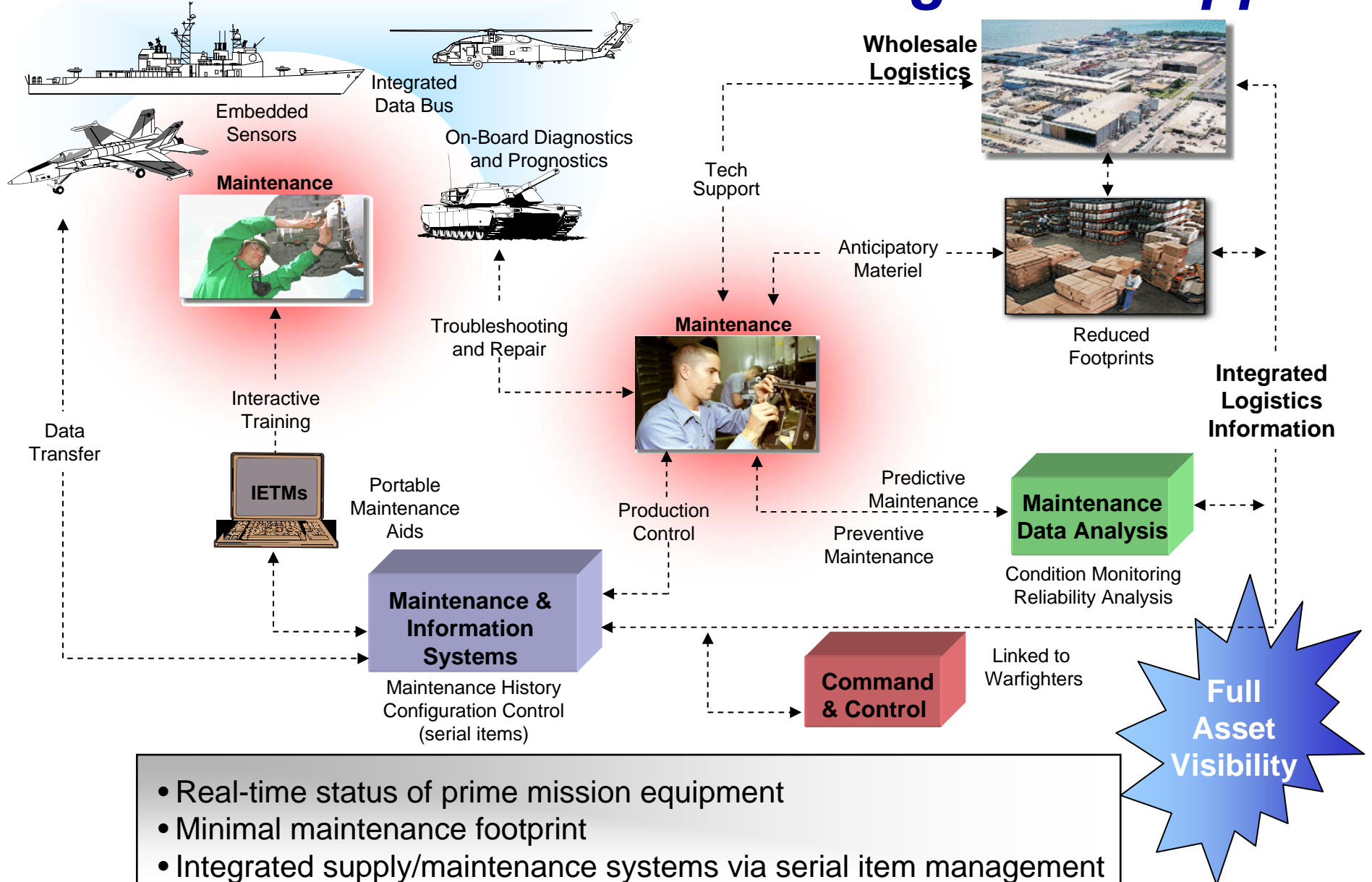
Self Reporting

Automatically feeds Army Shared Data Environment

Synchronized



CBM+ : Maintenance-Centric Logistics Support



Programs Contributing to GWOT

JSTARS

B-2

F/A-18 E/F

F-117

AWACS

C-17

Common Ground Station

Delivering Capability NOW!

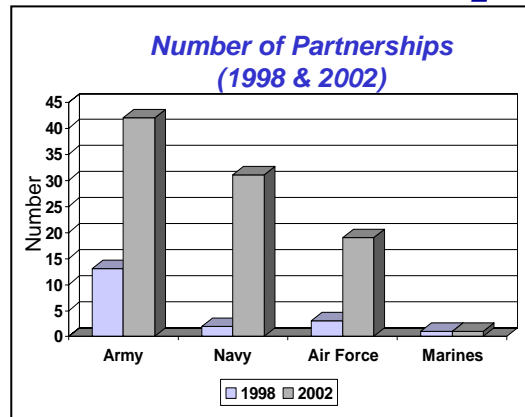
Common Ground Station



- PM is life cycle manager
- Government led PBL strategy
- Tobyhanna is product support integrator
- Deployed 30 CGS to support OIF
- Streamlined maintenance flow
- Achieved 99% Ao during OIF
- Forward-located repair activity at Baghdad International Airport
- Achieved real-time fleet management/asset visibility

Weapon System Sustainment Roadmap

- PM accountable for life cycle
- JROC established sustainment requirements
- Enabling Depot legislation
- Revised Maintenance Policy
- Industry Supply Chains
- Reengineered Training

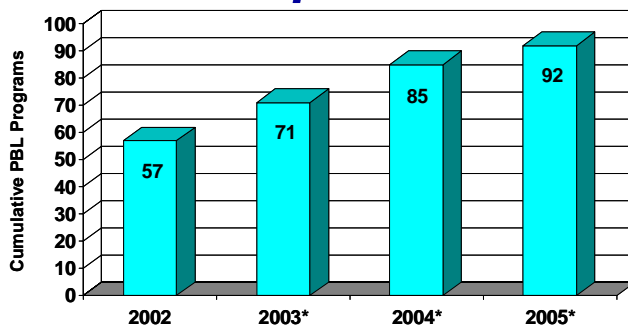


- Joint Strike Fighter
- Future Combat System
- Advanced Amphibious Assault Vehicle

- Today**
- Suppressed Readiness
 - Marginal reliability
 - Fractionated Accountability
 - \$67B/year
 - Huge footprint

- **Warfighter-driven readiness**
- **Ultra-reliability**
- **Clear PM accountability**
- **Minimal Footprint**

PBL Implementations



* Projected PBLs Based on Approved Service Plans

- Financial Reform (PR05)
- Single-line Accounting
- Life Cycle Cost Management
- Operational requirements synchronized with PBBS

2000

2005

2015

End-to-End Warfighter Support Challenges

Operational Challenges

- Conflicting in-theater roles and responsibilities
- Extended customer wait time
- High variability in response times
- Limited visibility/control over material flow

Structural Challenges

- Hard breaks between national and retail activities
- Financial processes driving behavior
- Military-unique information systems (batch processed)

Implications for Transformation

- Large footprint
- Complicated crisis planning
- Delayed response cycle

FLE Initiative

- Define end-to-end Executive Agents
- Adopt commercial distribution processes
- Implement Performance-Based Logistics
- Employ COTS solutions

Coherent strategy to capitalize on commercial model and practices to rapidly improve warfighter support.

Continuing Challenges

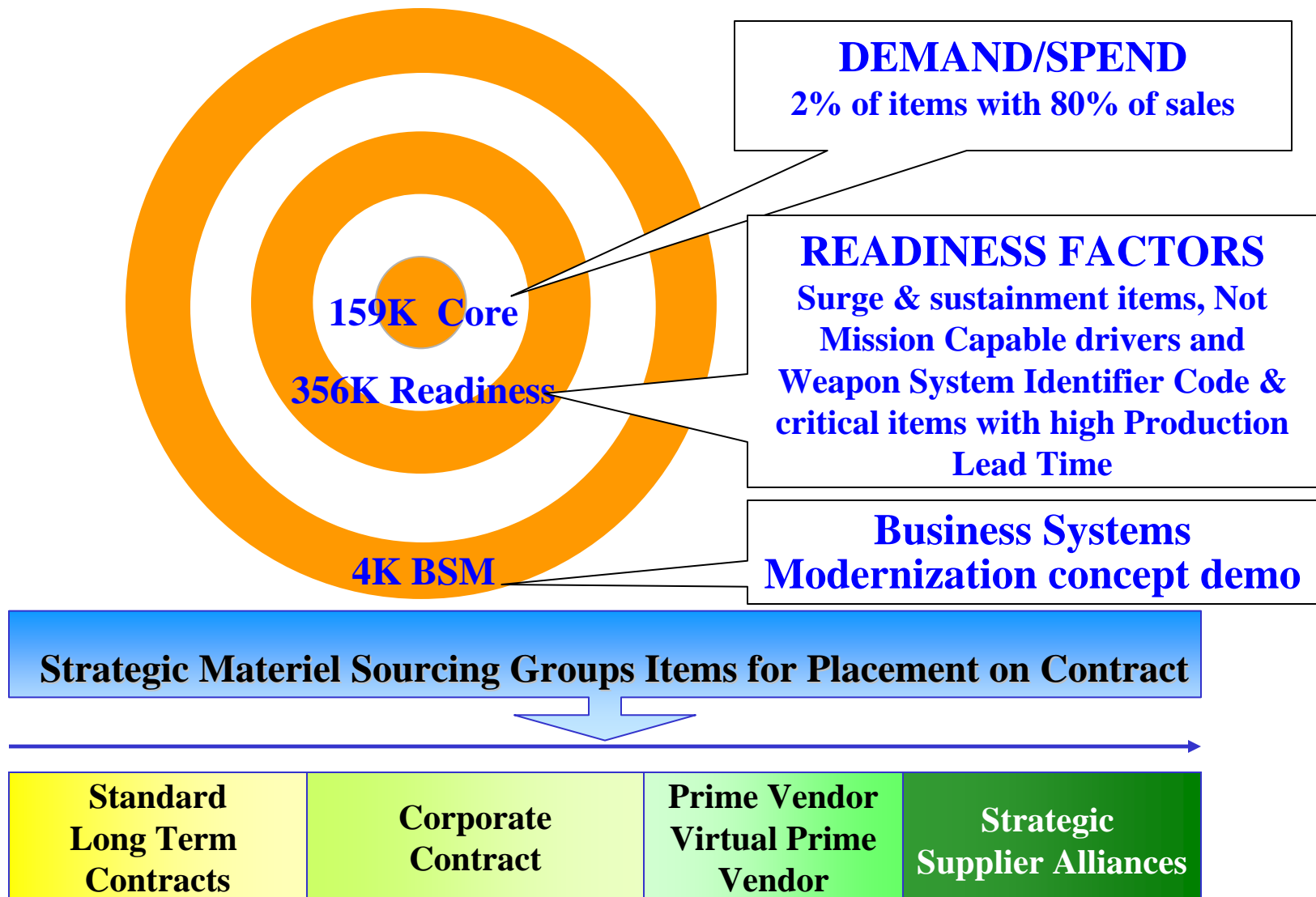


Commercial Business Solutions: (Revised Supply Policy)

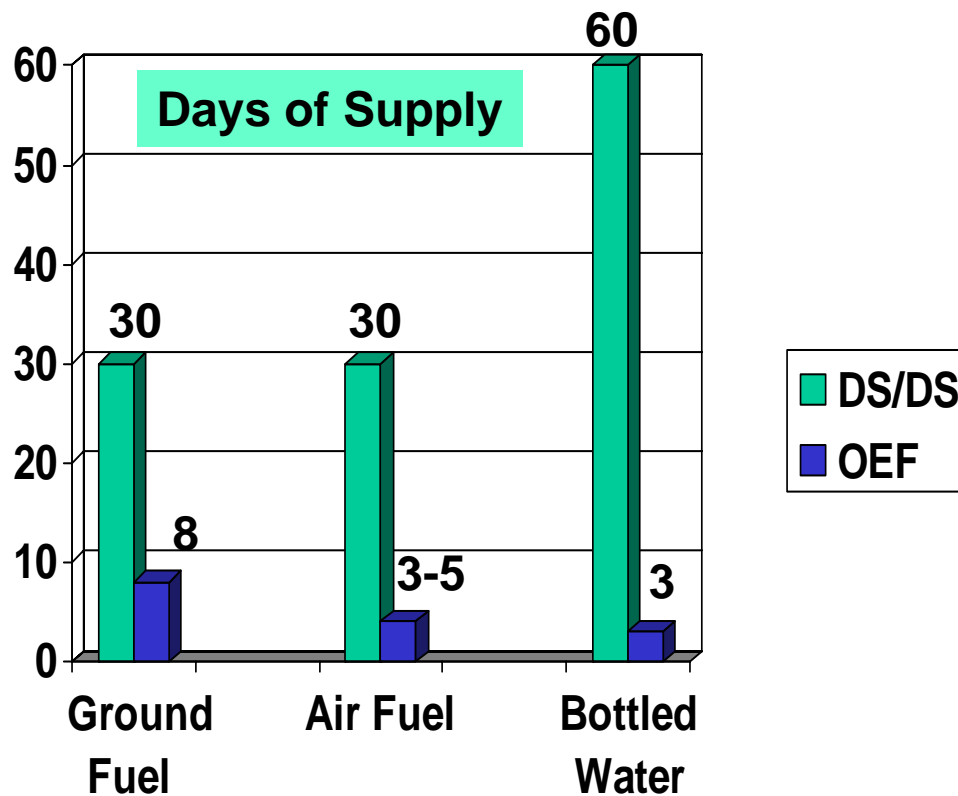
- Guidance presented by functional area
- Focus – Mechanics of performing supply functions
- Material managers select support alternatives for programs
- Max use of commercial with no guidance on interfaces required for success
- Guidance on MILS systems only
- Traditional programs/practices
- No MX/Supply cohesion

- Guidance presented with SCOR process model
- Focus – Customer oriented supply, best value decision-making
- Program manager select support alternatives
- Best value use of organic, commercial, and partnerships with guidance on interfaces
- Use of COTS and guidance relative to materiel management systems
- TLCSM & state-of-art procedures
- Maintenance/Supply interaction

Commercial Business Solutions: Consumable Materiel

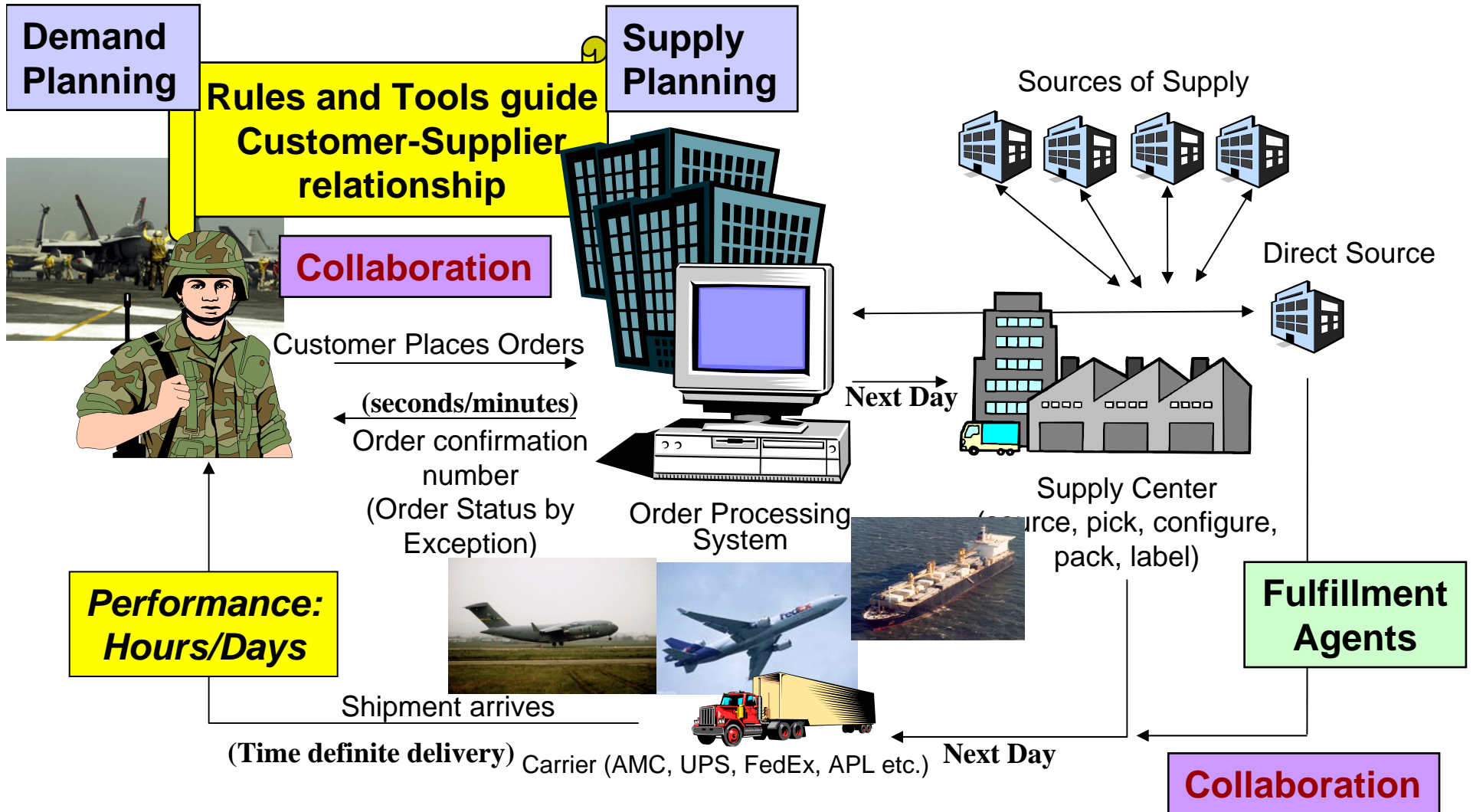


Operational Benefits of Effective Supply Chain Management



Overall: Reduced in theater stocks from 60 DOS to less than 10

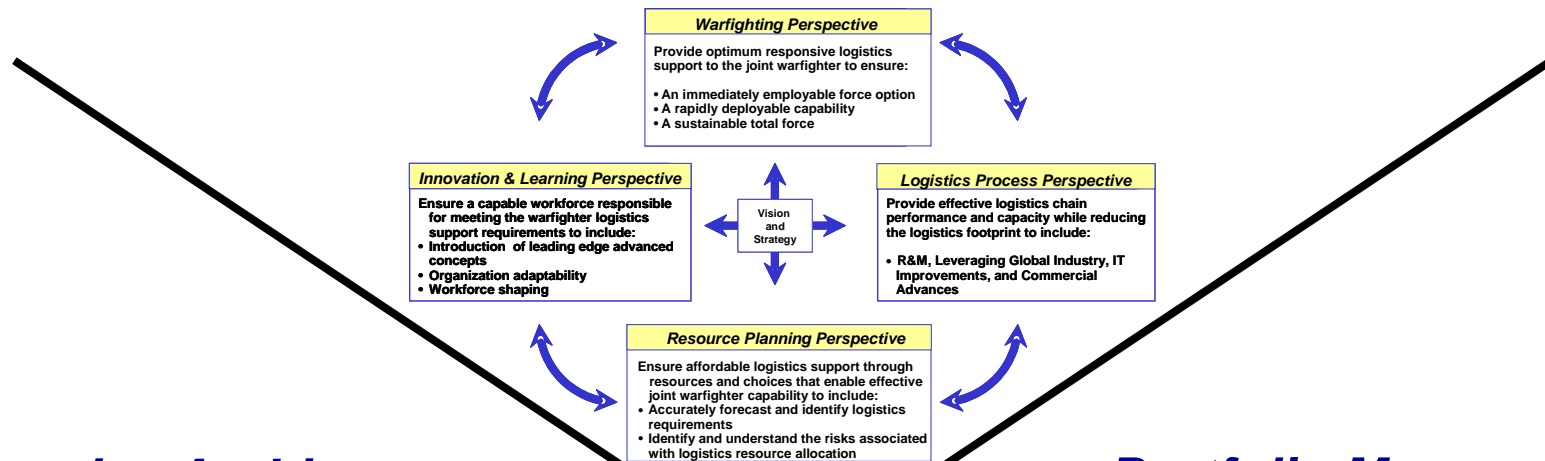
Commercial Business Solutions: Distribution



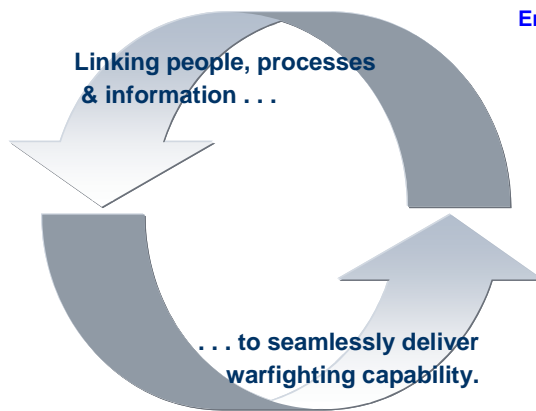
Simple, Responsive, Reliable, Visible

Enterprise Integration

Logistics Balanced Scorecard Synchronized to DoD BSC



Enterprise Architecture



Enterprise Integration End State:

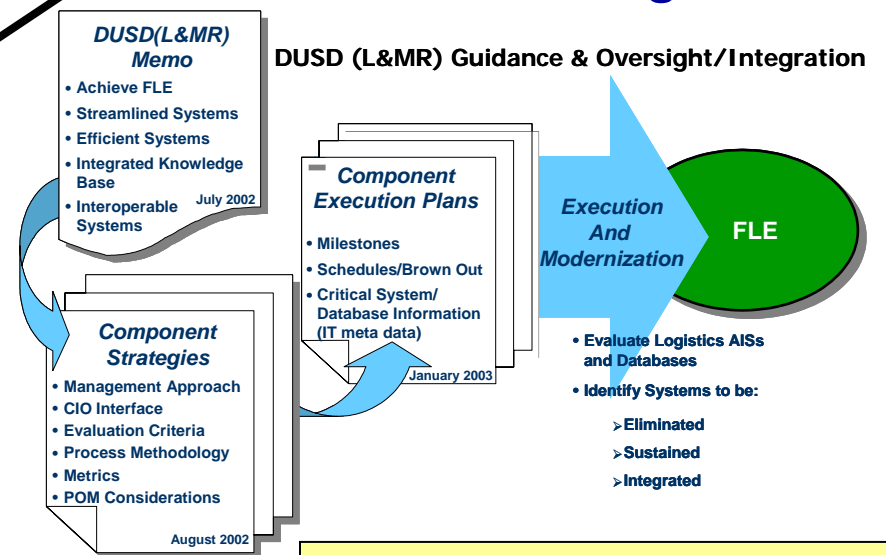
Highly trained and skilled people within the DoD Logistics Enterprise have access to near real time, actionable information

...provided by modern, commercially-based software products

...that have been rapidly implemented to enable reengineered logistics processes and business rules

Leading DoD Enterprise Integration

Portfolio Management



Streamlined Portfolio Management

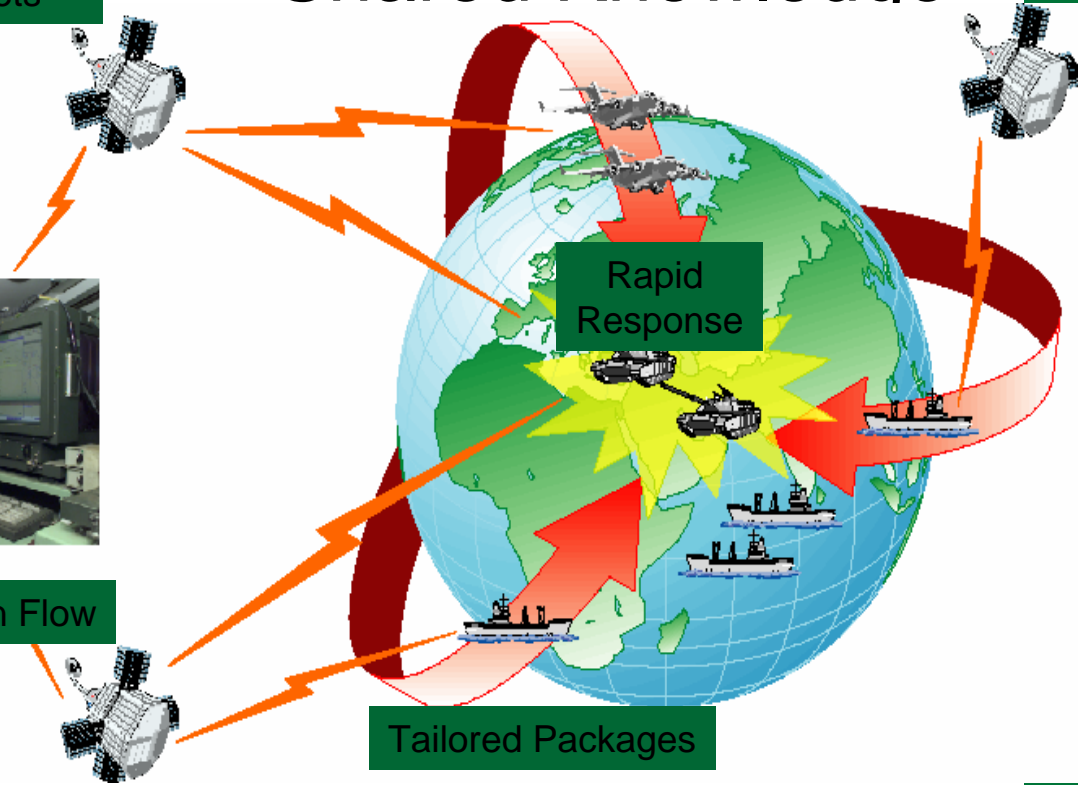
Logistics Situational Awareness

The Fix ... Situational Awareness through Shared Knowledge

Ability to Track & Shift Assets



Information Flow



Long-Term: Accelerate Modernization of Highly Reliable Systems

- Reduce footprint as a military requirement
- Streamline the acquisition process
- Achieve Focused Logistics
- Achieve net-centric operations

JROC: Focusing on Capability



CHAIRMAN OF THE JOINT CHIEFS OF STAFF INSTRUCTION

J-8
DISTRIBUTION: A, B, C, J, S

CJCSI 3170.01C
24 June 2003

JOINT CAPABILITIES INTEGRATION AND DEVELOPMENT SYSTEM

References: See Enclosure C

1. **Purpose.** The purpose of this instruction is to establish the policies and procedures of the Joint Capabilities Integration and Development System (JCIDS). The procedures established in the JCIDS support the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Requirements Oversight Council (JROC) in identifying, assessing and prioritizing joint military capability needs as specified in reference a. Validated and approved JCIDS documents provide the Chairman's advice and assessment in support of these statutory mandates. Additionally, the JCIDS is a key element in the Chairman's efforts to realize the initiatives directed in reference b. Specific procedures for the operation of the JCIDS, and for the development and staffing of JCIDS documents can be found in reference c.

2. **Cancellation.** CJCS CJCSI 3170.01B, 15 April 2001, "Requirements generation System," and DJSM-0921-02, 7 October 2002, are canceled.

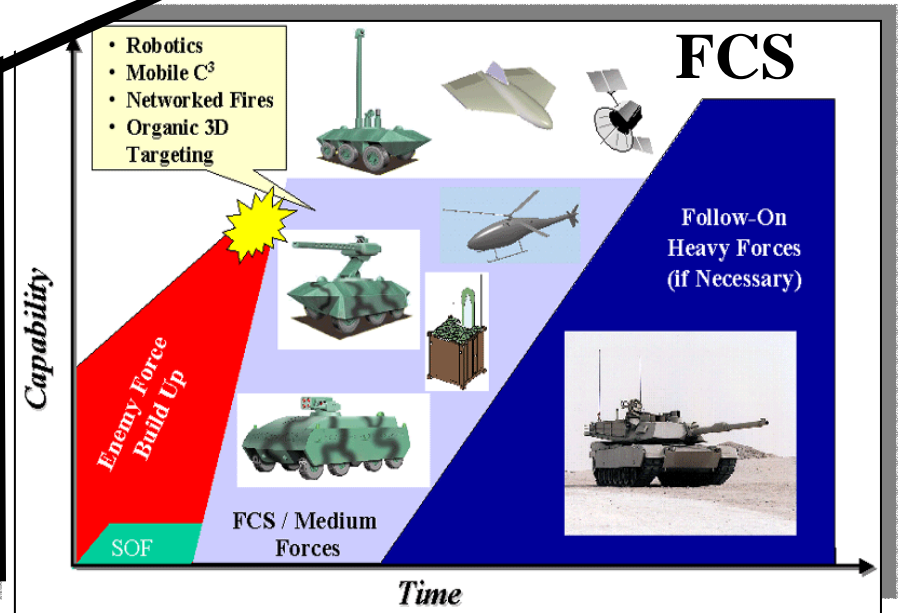
3. **Applicability.** In accordance with references d and e, this instruction applies to the Joint Staff, Services, combatant commands, Defense agencies and joint and combined activities. This instruction also applies to other agencies preparing and submitting JCIDS documents in accordance with references d and e.

4. **Policy**

a. This instruction is based on the need for a joint concepts-centric capabilities identification process that will allow joint forces to meet the full range of military challenges of the future. Meeting these challenges involves a transformation that requires the ability to project and sustain joint forces and to conduct flexible, distributed and highly networked operations. To achieve

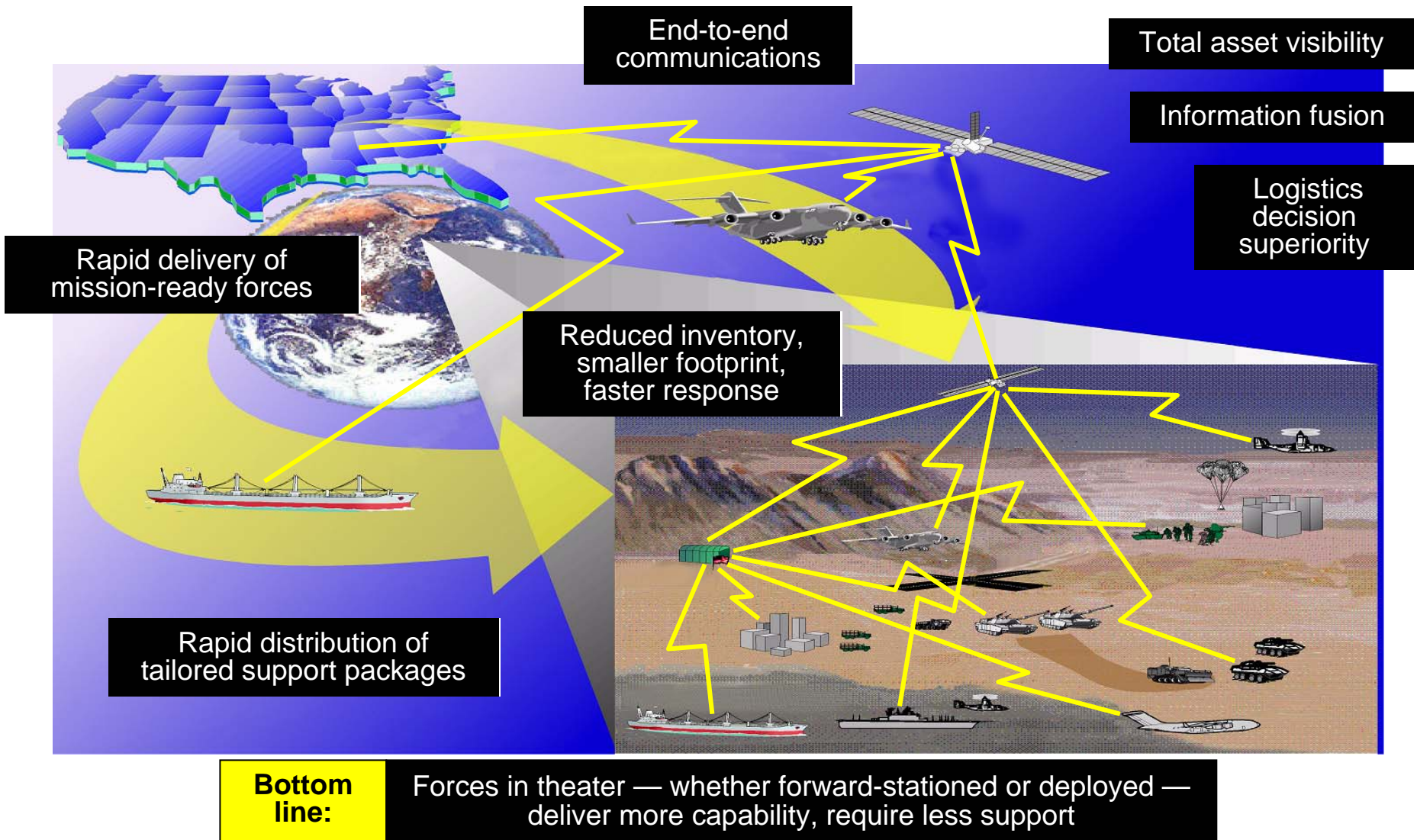
- Capability based
- Net-centric driven
- Mobility/footprint are military capabilities
- Reliability/maintainability are military performance parameters

The "Future" is being determined NOW!



Designing OUT Logistics

Focused Logistics



Logistics Transformation

Mass-Based



- More is better
- Mountains of stuff measured in days of supply
- Uses massive inventory to hedge against uncertainty in demand and supply
- Mass begets mass and slows everything down

Prime Metric: Days of supply

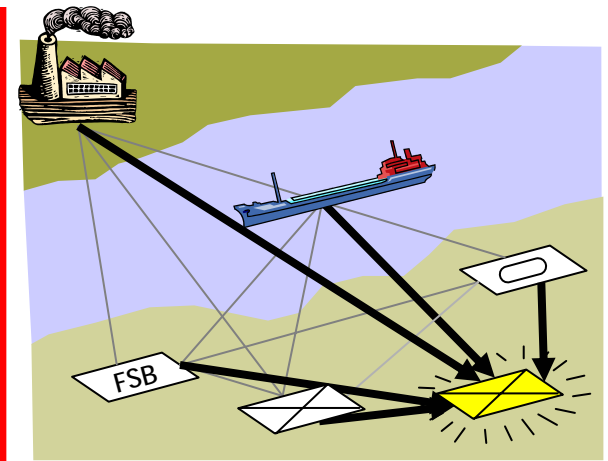
Just-in-Time



- Precision is better
- Reduce Inventory to a minimum and keep moving
- Use precise demand prediction and optimization to reduce uncertainty
- Works great, except when it doesn't

Prime Metric: Flow Time

Sense and Respond

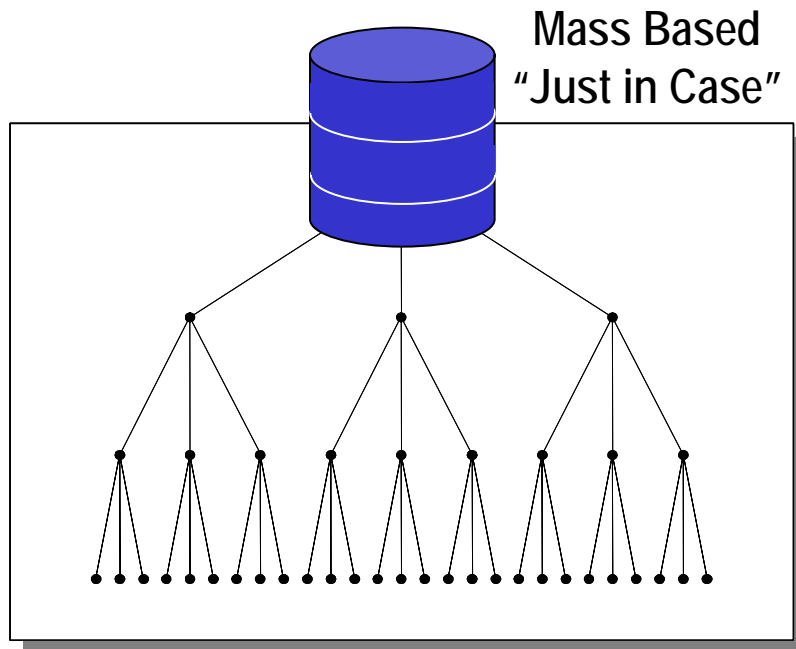


- Agile is better
- Dynamically positioned Inventory throughout
- Use transportation flexibility and robust IT to handle uncertainty
- Supports adaptive operations

Prime Metric: Effects

Migrating to the Force-centric Logistics Enterprise

The Problem: Logistics in a World of Network Centric Operations



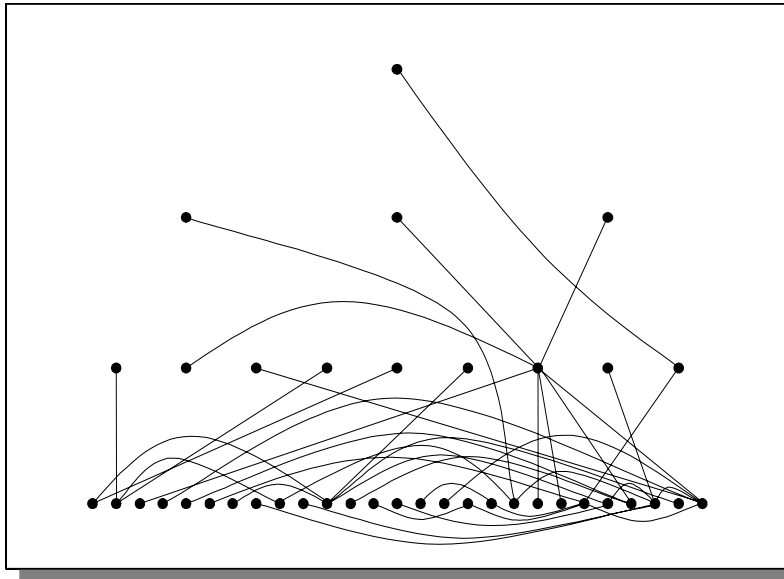
Chain

Too brittle, simple pattern, simple control, scaled

'business end' most poorly connected, hard to reconfigure or change flow

- Classic logistics is not agile enough for distributed adaptive operations
 - Has no ability to reconfigure the logistics network relationships, inventory, or distribution strategy
 - Entails long buildup times, longer resupply cycles, and large inventories
 - Operates best with “massing of forces” combat doctrine
- Classic logistics involves an unstable combination of push and pull signals
 - Supply pull signals beyond the first level are inventory fills
 - Rear suppliers don't see combat unit demand and can be whipsawed
- Classic logistics is vulnerable
 - Results in asset concentration in stockpiles towards rear (targets)
 - Relies on a linear battlefield and secure log area
 - Exhibits predictable network structure
- Classic logistics is inefficient
 - Combat units can only draw on the supply in their chain, not (typically) the total battlefield stocks or stocks of other services

Sense and Respond Logistics



Network

**Very robust, complex pattern,
complex control, scale free**

**'business end' best connected,
natural to reconfigure or change flow**

- Supply network is dynamic
 - Supply doctrine anticipates reconfigurable supply nets
 - Emphasizes transportation flexibility over large inventories
- Negotiation-based relationships
 - All entities use commander's intent and detailed situation awareness to negotiate and synchronize
 - Roles and commitments of entities are dynamically defined within a specific context
 - All entities are described in terms of current capabilities, not as static forces
- Networks are difficult to analyze and attack
 - More robust to node failure
 - Adapts to real-time demand driven by unit signals
- Supports a more logistically agile force
 - Network adaptivity allows logistics decisions to be made later
 - Emphasis on information and transportation allows a greater degree of operational flexibility

The End Game

*Ubiquitous, cost-effective capability
to project and sustain power.*