



Wednesday, 26 October



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- **11:30 AM: Lunch**
 - Buffet in BJCC Exhibit Hall
 - Walkway to BJCC – from Sheraton atrium
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- **2:45 PM: Senior Logisticians' Roundtable**

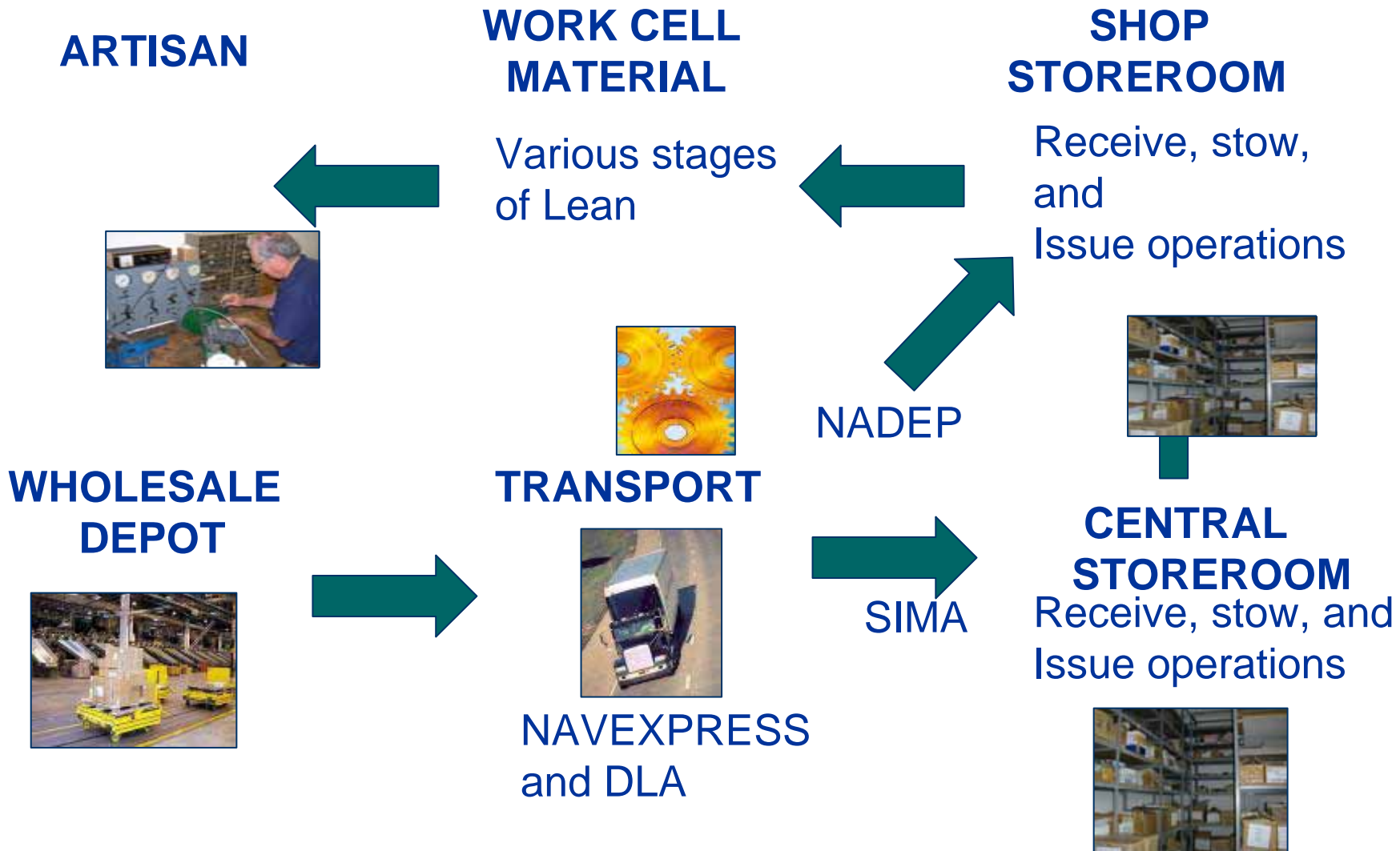


DOD MAINTENANCE SYMPOSIUM

Kevin Gannon
Captain
United States Navy
October 26, 2005



Previous flow included multiple material locations within the region





Streamlined replenishment is enabled by lean operations, synchronized flow, and a hub

LEAN OPERATIONS



- Material as needed for:
 - repetitive tasks
 - scheduled work
- Lean design
 - Bins
 - Designated areas
- Existing accounts remain

SYNCHRONIZED FLOW



- Replenished by Pull signal or to schedule
- Lead times coordinated if stocked out of Region

REGIONAL HUB



- Single receive, stow, and issue within a region
- Wholesale or retail Inventory accounts



SWRMC

935L Pump Shop Kanban

- Developed kits by analyzing '02-'03 job history
- List narrowed to 14 most common pumps
- Purchased 2 kits per pump identified
- Results:
 - Able to accept all emergent work
 - LT reduced by 80%
 - Cost savings (no expediting of parts or vendor costs) between \$20 and \$500 per item; \$54,000 annually
 - Reduced overtime and weekend work for shop personnel by 430 hours



SWRMC

935I Valve Shop Kanban

- Purchased kits for Leslie parts for Red Head, CLA-VAL
- Results:
 - Able to accept all emergent work and increase effectiveness on CASREPs
 - LT reduced by 90% (2-3 weeks removed immediately)
 - Cost savings (no expediting of parts or vendor costs) approximately \$40,000
 - Reduced overall man-hours for shop personnel by 2,000 hours
 - A more budding process than the Pump Shop; Still determining parts to develop pre-planned packages to provide an even more effective Kanban



Streamlined replenishment creates benefits

- Availability increases
 - Demand driven replenishment, bullwhip effect reduced
 - Actual demand more visible
- Work content is reduced
 - Single inventories eliminate 13% of current activity
 - Synchronized flow eliminates 54 % of current activity
- Productivity improves
 - Labor at multiple sites leveraged, inefficiencies reduced
 - Storeroom space reduced, available to production
 - Inventory levels can be reduced, acquisition closer to time of use
- Tangible incentives for continuous improvement created
 - Replenishment costs become variable, an incentive for lean behaviors
 - Replenishment space and labor all at a single location, not some at many locations



OMS Inventory/Excess Results

Processed 963 line items with a turn-in value of \$479,648.00. The following is a summary of processing shop excess material:

<u>Activity</u>	<u>No of Line Items</u>	<u>Money Value</u>
DRMO	382	\$ 72,790.32
RRAM	112	\$208,772.09
MTIS	0	\$ 0.00
*Bldg 116	469	\$198,086.08
TOTAL:	963	\$479,648.49

***Bldg 116 are shop demand items still tracked/distributed in NEMAIS for future work orders**



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IBM Global Services

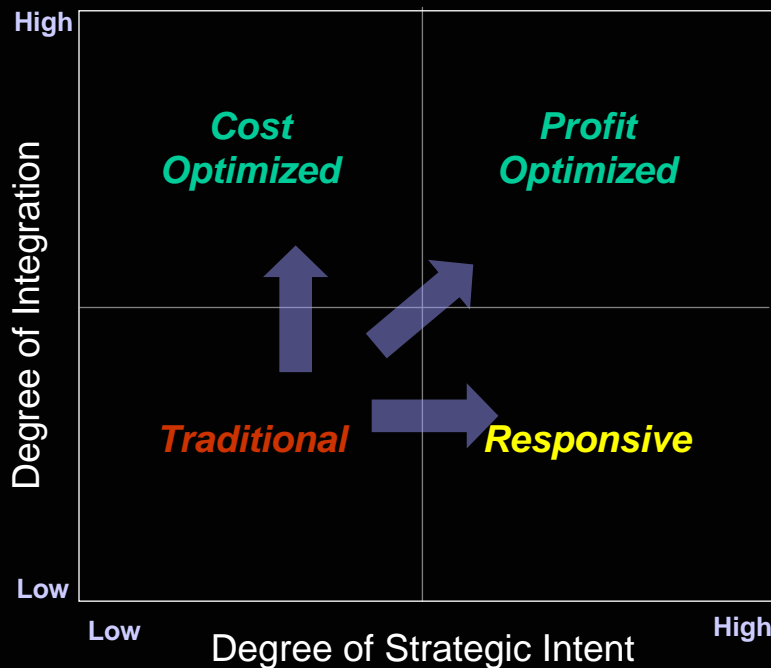
IBM Service Parts Management

Dr. Grace Lin, **Global Sense and Respond Leader**
IBM Business Consulting Services
Member, IBM Academy of Technology
VP Practice, Informs
Email: gracelin@us.ibm.com

2005 Department of Defense Maintenance Symposium & Exhibition
Birmingham, Alabama, USA
October 24-27

Several forces are challenging the sustainability of the traditional model of service management

Forces of Change

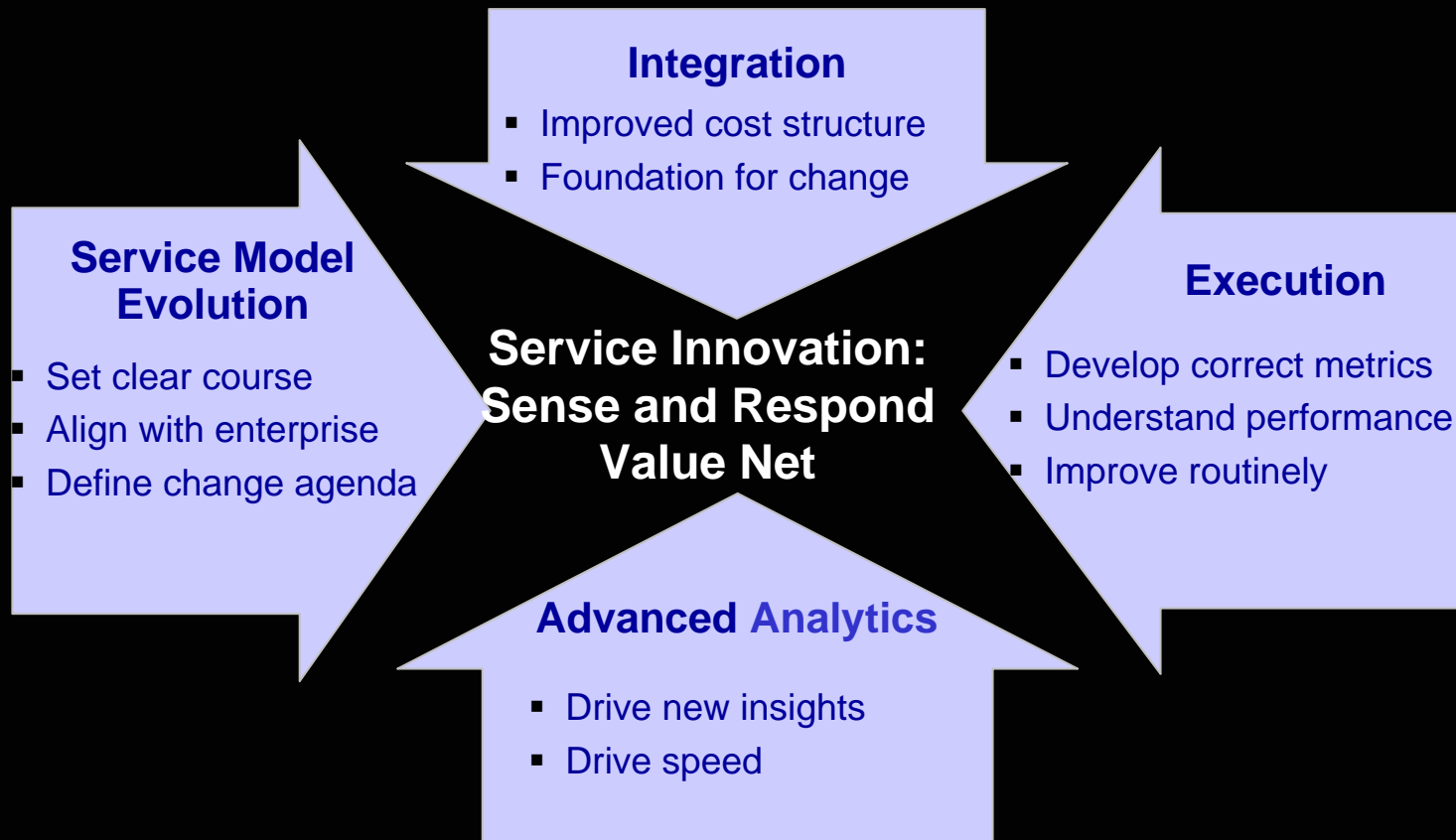


- Warranty impact
- True expense to revenue
- Missed profit potential
- “Service” and the Competitive Equation
- Customer satisfaction
- Rich target for optimization



In many cases the traditional service model is impeding the CEO agenda

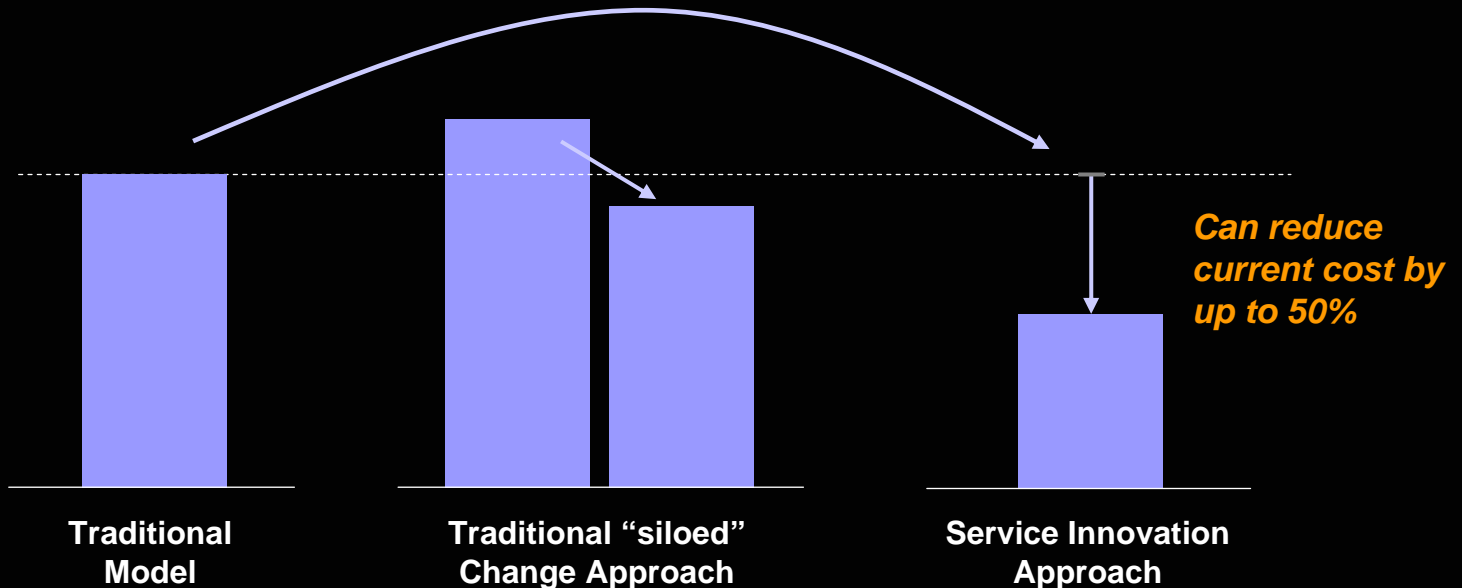
Service Innovation: The Path to Change



We have learned that applying innovation to the service function drives transformational change

Integrated Service Models

Service Expense as % of Revenue



Model Characteristics

- Functionally managed
- Disjointed
- Fragmented across broader organization
- Poor understanding of real cost
- Little understanding of operational performance

- Functionally optimized
- Sacrifice overall optimization
- Internally focused
- Poor decision quality
- Higher cost to manage change
- One time approach to change
- Limits options

- Managed to overall goals
- Lowest total cost
- Enables routine improvement
- Serves as foundation to new models
- **Sense and Respond in real-time with intelligent, proactive, and closed loop feedback control**

IBM service business model is based on the tight integration of the core processes across the value chain including Spare parts management and customer supply chain, and closed-loop feedback mechanisms

Global characteristics

5 worldwide Control Towers and physical hubs
 300 main stock locations WW (170 IBM countries)
 Over 250.000 Service Part numbers for IBM and OEM
 Service ranging from: On site - 2/4hrs - Next Day
 Network availability 7x24x365
 Over 1400 WW parts suppliers
 One WW IT system and 2 GEO legacy IT systems
 Back-up for international discontinuity issues
 30 million movements a year both Forward and Reverse
 Network > 90% executed by Logistic Service Providers

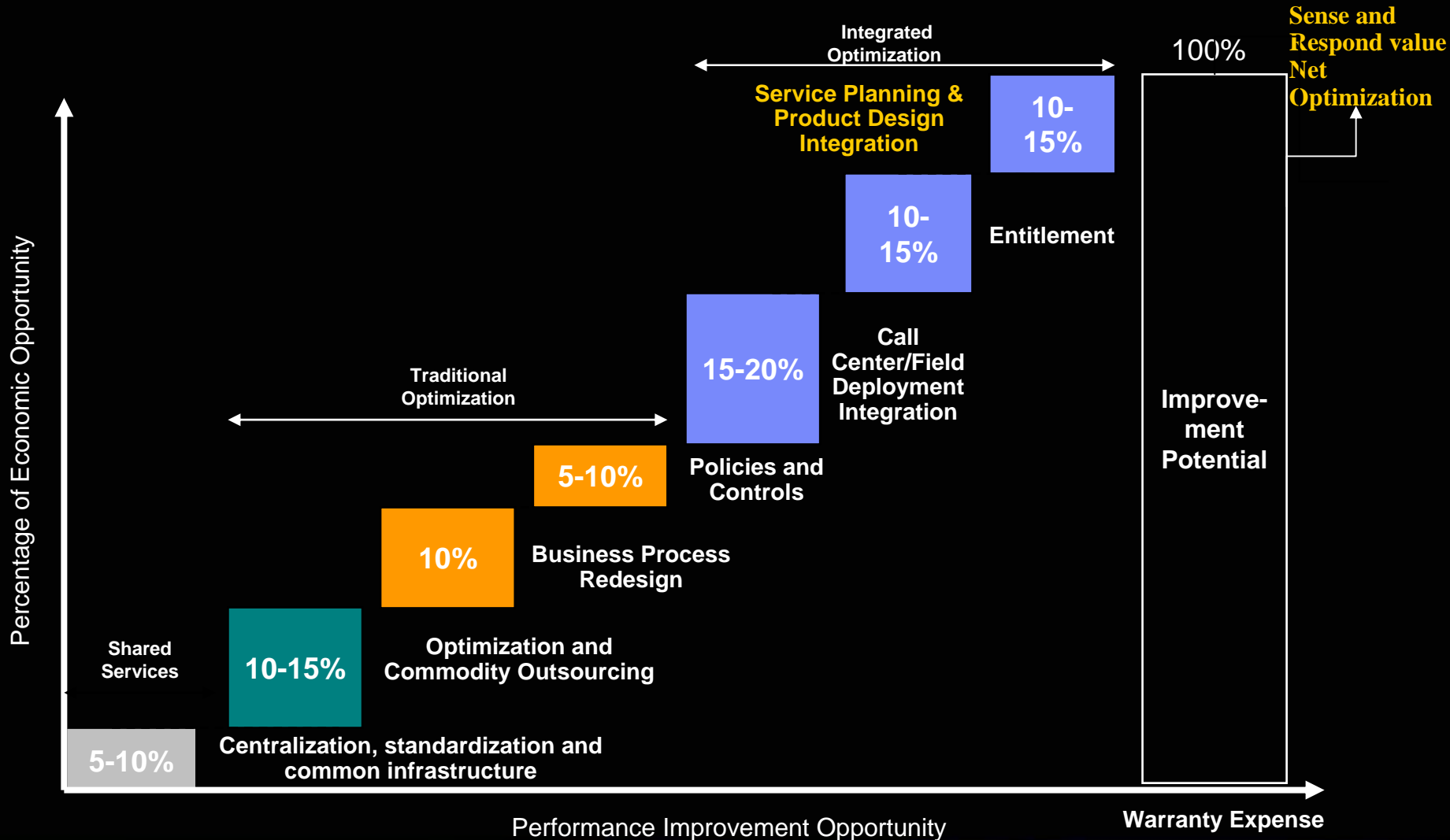


- Warehousing
- Import / export
- In- outbound transportation
- Customer delivery
- Customer returns

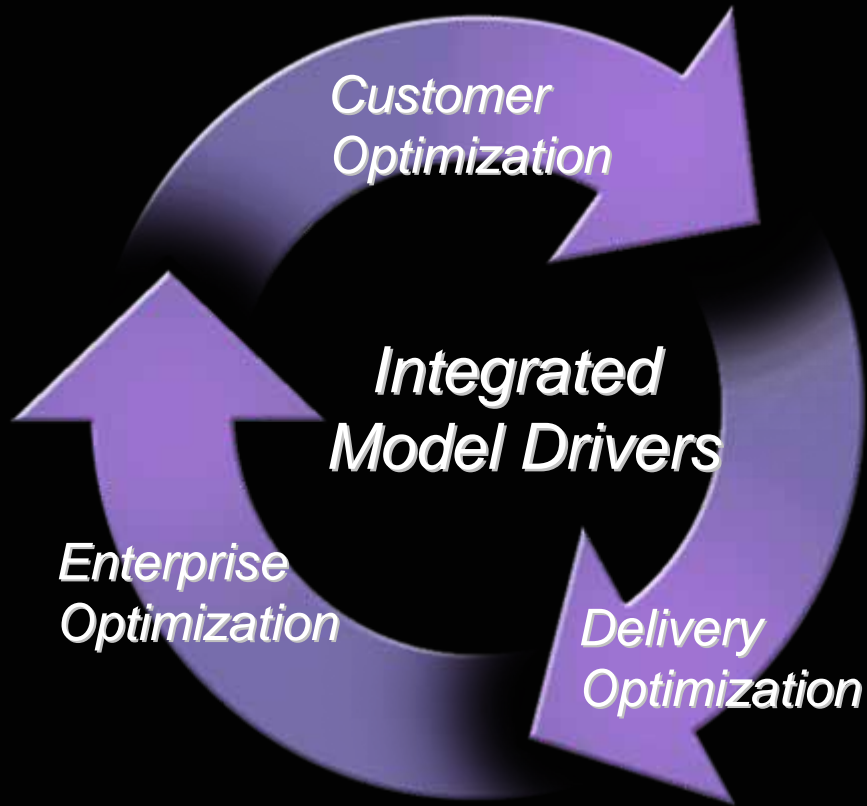
Current US Environment

More than 5000 IBM Field Maintenance Service Personnel
 Respond to >3.4M Customer Service Requests Per Year
 Receive 1.4M Calls Electronically Per Year
 IBM & Selected OEM Hardware Products
 Service 24x7, 365 Days Per Year
 350k Parts Stocking Units – 4.2M Parts Movements Per Year
 About 1500 Remote Support & Service Planning Personnel
 About 2M Calls Remotely Assisted Customer PD
 50% of the Problems Cleared Remotely

Over 50% of the opportunity will remain unaddressed if one simply automates the traditional model



Integrated Service Model Value Drivers



- **IBM Service Parts Solutions: Seamless e2e process leveraging IBM systems & process blueprint, Execution outsourced to multiple service partners**
 - **Inventory Initiatives**
 - **Integrated Product Development process**
 - maximizing parts and inventory management by building a common supply, warranty and reutilization plan at the earliest possible stage of product development
 - **Reverse Logistics**
 - **Single Global Parts System**
 - Data Management,
 - Time Based Field Planning. Field Forecast
 - Central Planning: Forecast
 - Order Management / Procurement

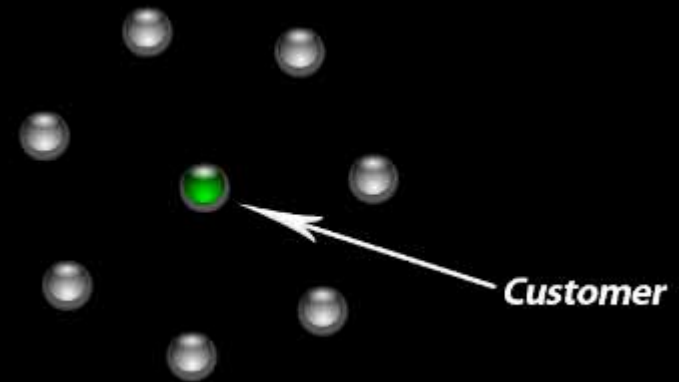
Inventory Initiatives

- Air Support Program
 - high dollar low usage parts
 - build 2 – 4 hour network
- Inventory Deployment Strategy
 - Network Neighborhood: Time based Inventory Optimization Proprietary Software
- OEM Direct Ships
- Commodity Logistics Center
 - IBM retains only same day inventory for high volume commodities
- Inventory and policy Reduction Program
 - Policy Reduction
 - Order Line Management
 - Excess Disposition
- Global Parts System

IBM Neighborhood Process

Service Regions are created around the Customer

Pass-up demand is converted to Pass-Along demand



Service Delivery criteria is Time-Based

Inv. Transport & Handling Costs Influence Stock Decision

Regional Containment is Improved

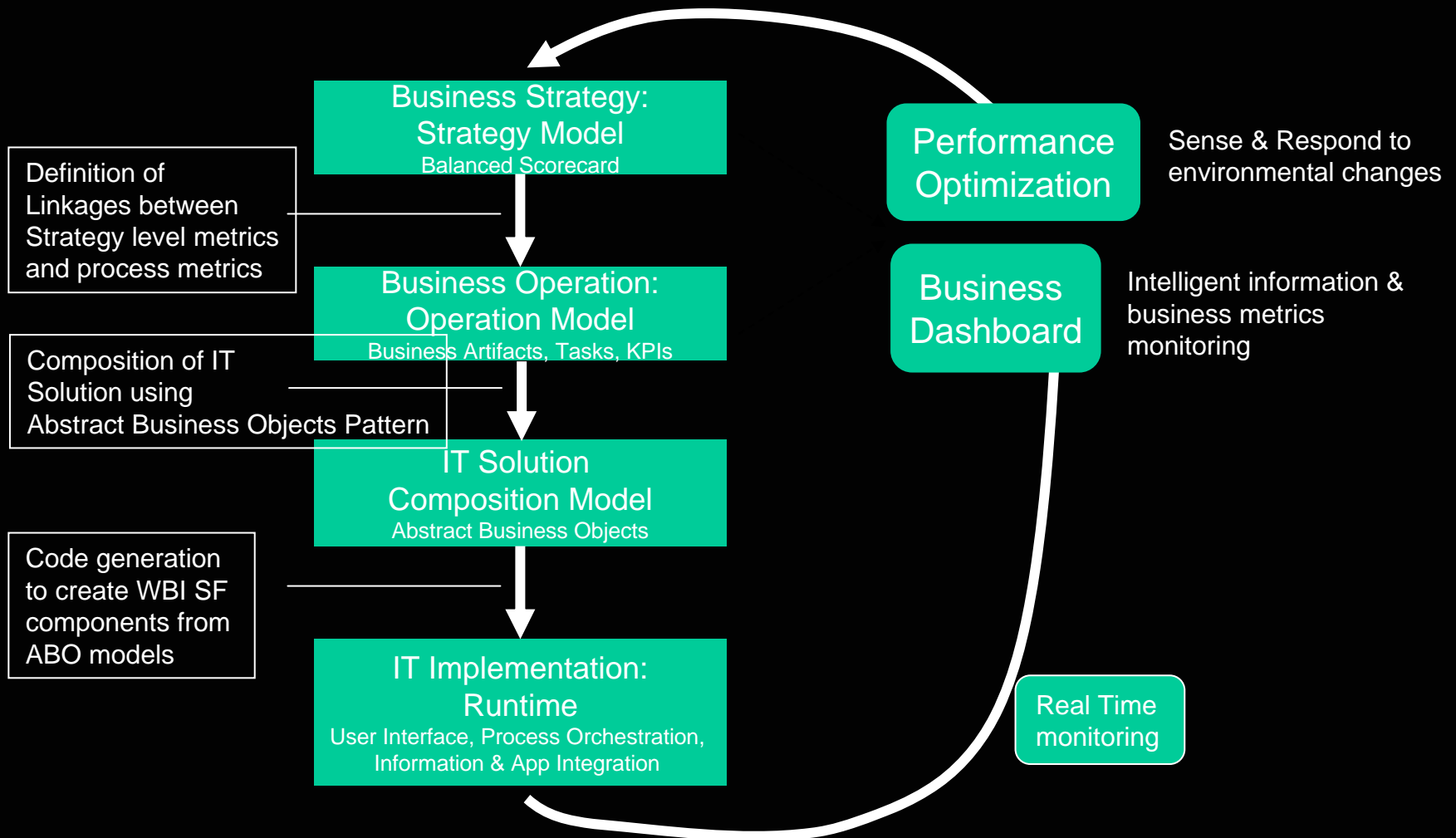
Business Critical Objectives

Engineering Vitality	Parts Delivery Time (PDT)				
	2 Hour	4 Hour	Same Day	Next Day	2nd Day
V1: Hard Down	85%	90%	95%	97%	
V2: Degraded		80%	90%	97%	
V3: Safety Impact				90%	97%
V4: Preventative Mnt.				70%	90%
V5: Non-Vital				50%	80%

Engineering classifications used to determine part failure
impact on machine performance

Service Group

Sense and Respond Model Driven Business Transformation



Service Parts Management



➔ **Sense and Respond Value Net
Service Parts Management**



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Air Force Materiel Command



AFMC

War-Winning Capabilities ... On Time, On Cost



U.S. AIR FORCE

Air Force Purchasing and Supply Chain Management

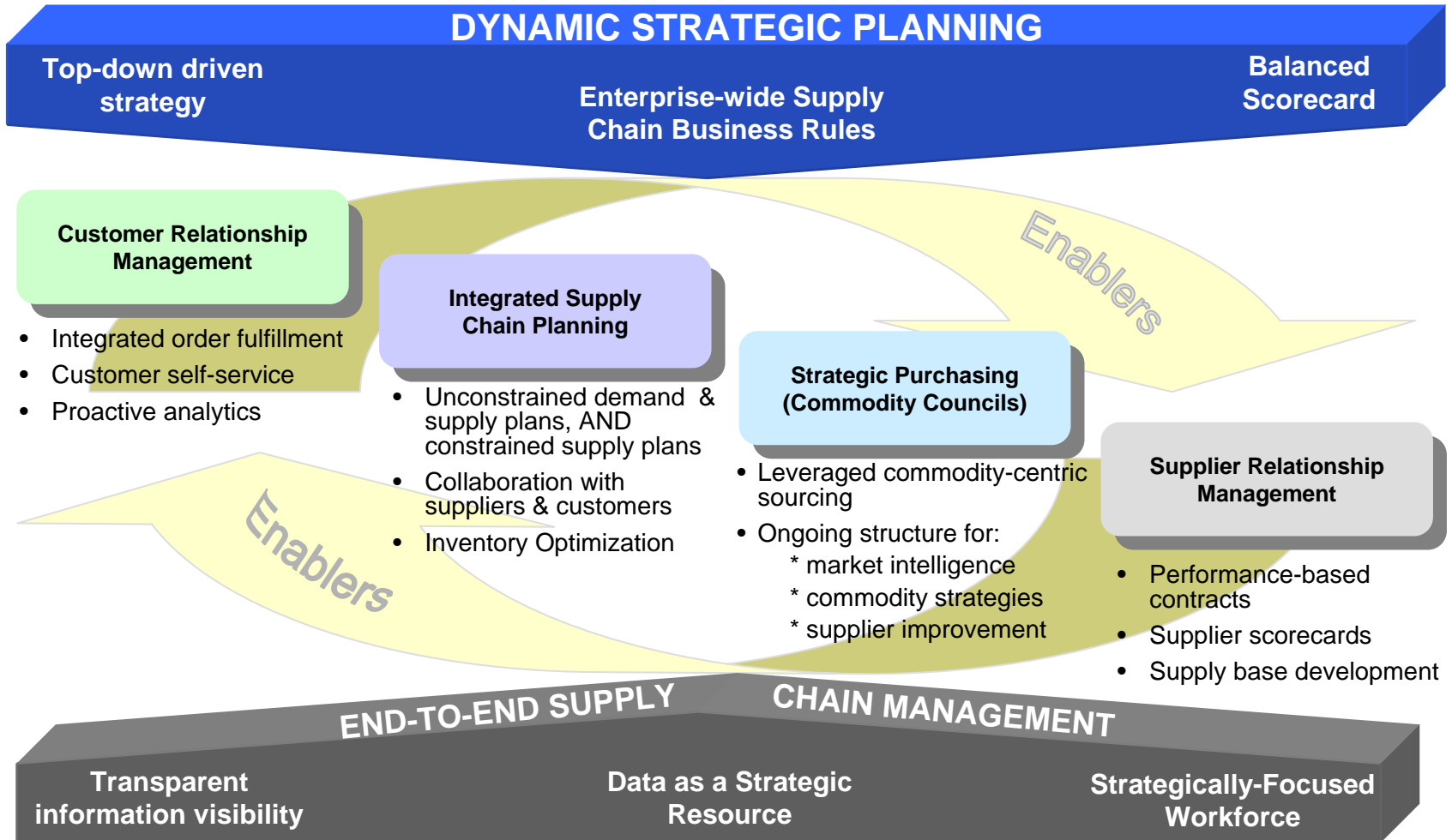
Mr. Dan Bowman
Chief, Supplier Management Division
AFMC

Integrity - Service - Excellence



Initiative No. 3 – Purchasing & Supply Chain Management

Major Air Force initiative to improve and integrate AFMC's purchasing and supply processes





One goal of PSCM is a large reduction in Sourcing Cycle Time



AFMCG

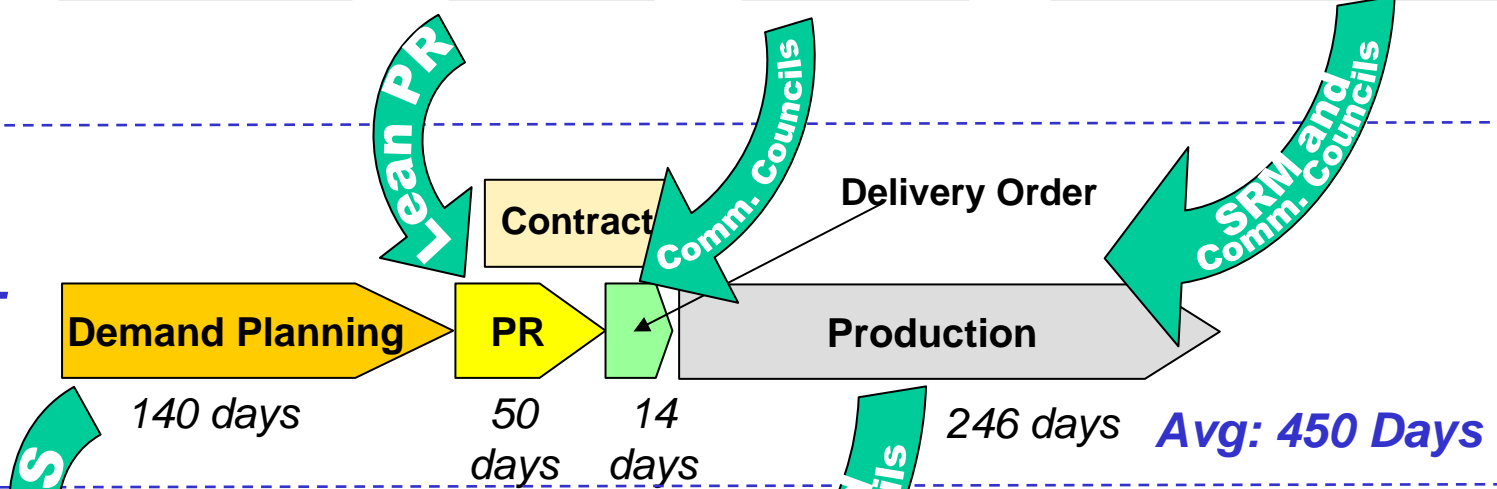
Example of Expected Improvement

Avg: 660 Days

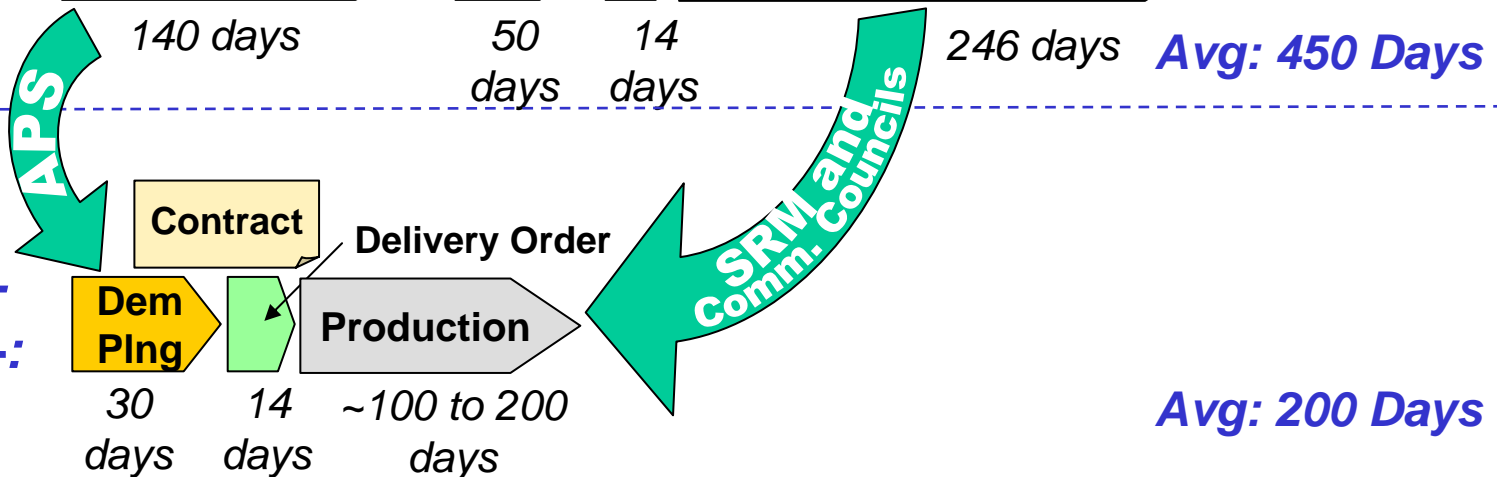
2004:



FY05 - FY07:



FY07 - FY09+:





Commodity Councils (CC)



- **Cross-functional groups, charged with developing enterprise-wide purchasing strategies and establishing centralized contracts for selected commodity groups. Responsible for:**
 - **Developing and executing AFMC-wide commodity sourcing strategy**
 - **Monitoring supplier performance**
 - **Conducting commodity market research**
 - **Developing suppliers**

Future State

- AFMC-wide, Commodity-centric sourcing
- Enterprise-level governance
- Strategic, not tactical sourcing
- Cross-functional
- CC goals linked to AF goals: increase material support, reduce cycle time and cost
- Goals to be achieved by executing enterprise wide procurement strategies, leveraging purchase volume

Accomplishments

- Launched 8 Commodity Councils
- Developed Commodity Management Plans for 20% of our sustainment spend and 30% of our active sustainment NSNs – leading to 85% reduction in cycle time
- To date we have signed 3 contracts and added 30+ high volume NSNs on strategic contracts



Integrated Supply Chain Planning



- Unconstrained demand and supply plans, and constrained supply plans
- **Data treated as strategic resource**
- Monthly demand and supply collaboration with key suppliers
- Exception-based reviews and analysis
- Limited use of PRs (spot buys only)
- **Approvals delegated to knowledge level**
- On-line tech data with enterprise-wide visibility and access

Future State

- Suppliers and customers will both see unconstrained demand plan and will collaborate
- ERP migration toward one supply system
- Relentless pursuit of data integrity
- Reduced end-to-end cycle time
- More accurate forecasts, improved supply availability
- Reduced product costs – better coordination

Accomplishments

- Workload Deferrals
- Interim Demand & Supply planning improvements
- SSRB Improvements



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Active Performance Management



DoD Maintenance Symposium

October 26, 2005

Active Performance Management

A form of Supply Chain Event Management

- **What is APM?**
 - A COTS supply chain management software
 - Proactively detecting, evaluating and resolving critical exceptions in near real-time
- **How does APM work?**
 - Data from multiple systems across the extended supply chain are integrated, normalized and evaluated for exceptions
 - Exception types are defined in business rules, generating proactive notification based on events
 - Notifications of exceptions are generated in real-time and tracked through to resolution

APM has broad application across the Supply Chain


Active Performance Management

Key Benefits

- **Near-real-time exception detection**
- **Standardized resolution process supported by context driven information**
- **Single point of visibility for exceptions and resolutions**
- **Role-based subscription to worklist and watchlist**
- **User configurable views for managing exceptions and data**
- **Historical repository for follow-on root cause analysis**

Detects, Evaluates and Aids in Resolving Critical Exceptions in the Supply Chain

Active Performance Management DoD Pilot Project Overview



Conduct a
“Real World”
Test

- **Goals**
 - Evaluate the technology
 - Validate applicability within the DoD environment
 - Assess potential business benefits
- **Scope: Resolution of Frustrated Cargo**
 - Phase I: HazMat Cargo at Dover, Charleston, and Defense Depot – Richmond, VA
 - Phase II: All Commodities at Pilot APOEs and GSA Burlington, NJ
- **Approach**
 - APM monitors GATES for cargo “frustration” events, collects contextual information from other systems and routes to users for corrective action
 - Worklist Users: Act to Resolve Frustrations
 - Watchlist Users: Monitor Resolution Steps and Results

Active Performance Management Pilot Project Conclusions

- **APM Pilot proved that supply chain event management adds value to DoD**
 - Significant Improvement in Key Metrics
- **APM has real business value in enabling continuous process improvement**
 - Identification of Gaps and Seams
 - Root Cause Analysis
- **APM is applicable to a wide range of supply chain business processes, extending beyond distribution**

**APM Improves Supply Chain Performance and
Reliability**

Active Performance Management Potential Applications in Maintenance

- **Planning**
 - Reliability, Maintainability & Availability
 - Stockage determination (demand variability)
- **Execution**
 - Order and ship time
 - Parts availability
 - Retrograde
- **Process Analysis and Improvement**
 - Repair cycle deviations (parts, people, processes)
 - Financial management

APM can deliver ***actionable intelligence*** across the
maintenance spectrum

Active Performance Management Points of Contact

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