



J. Joseph Loudon
NAVSEA TOC Deputy



Agenda

- What is TOC
- Why is This Important
- How Are We Going To Do It
 - This is Where we get into “Free Money”

Scratch
the Surface

A green thought bubble with a black outline, containing the text "Scratch the Surface". It has three smaller green circles leading to it from the bottom left.

Wet Your
Appetite

A green thought bubble with a black outline, containing the text "Wet Your Appetite". It has three smaller green circles leading to it from the top right.

Tip of the
Iceberg

A green thought bubble with a black outline, containing the text "Tip of the Iceberg". It has three smaller green circles leading to it from the top left.

What is TOC?

"TOC is the sum of all financial resources necessary to organize, equip, train, sustain, and operate military forces sufficient to meet national goals in compliance with all laws, all policies applicable to DoD, all standards in effect for readiness, safety, and quality of life, and all other official measures of performance for DoD and its Components." - NAVAIR

DoD TOC Definition

DoD TOC is the sum of all financial resources necessary to organize, equip, sustain and operate military forces sufficient to meet national goals in compliance with all laws, all policies applicable to DoD, all standards in effect for readiness, safety, and quality of life, and all other official measures of performance for DoD and its Components. DoD TOC is comprised of costs to research, develop, acquire, own, operate, and dispose of weapon and support systems, other equipment and real property, the costs to recruit, retain, separate and otherwise support military and civilian personnel, and all other costs of business operations of the DoD.

Life Cycle Cost Definition

Defense Systems TOC is defined as Life Cycle Cost (LCC). LCC (per DoD 5000.4M) includes not only acquisition program direct costs, but also the indirect costs attributable to the acquisition program (i.e., costs that would not occur if the program did not exist). For example, indirect costs would include the infrastructure that plans, manages, and executes a program over its full life and common support items and systems.

TOCR Defined

The Army process to effect *measurable improvements* in our materiel solutions/systems, business processes, and infrastructure to reduce cycle time, increase support systems efficiencies, reduce ownership costs, and *improve/maintain Readiness*.

THE TOC EQUATION

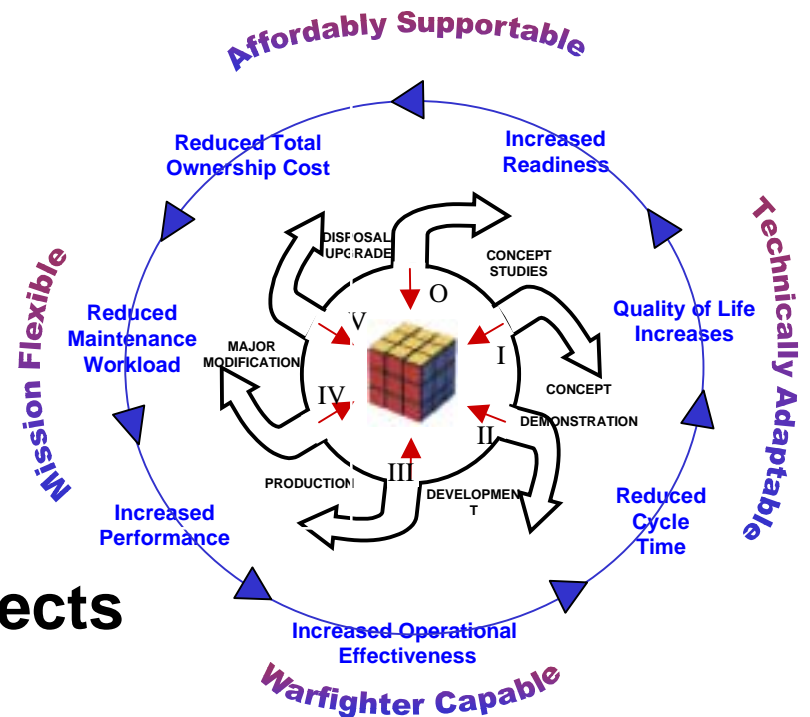
DoD TOC = DoD TOA

Defense System TOC = LCC*

... for Navy,

LCC = Direct Costs + Linked Indirects

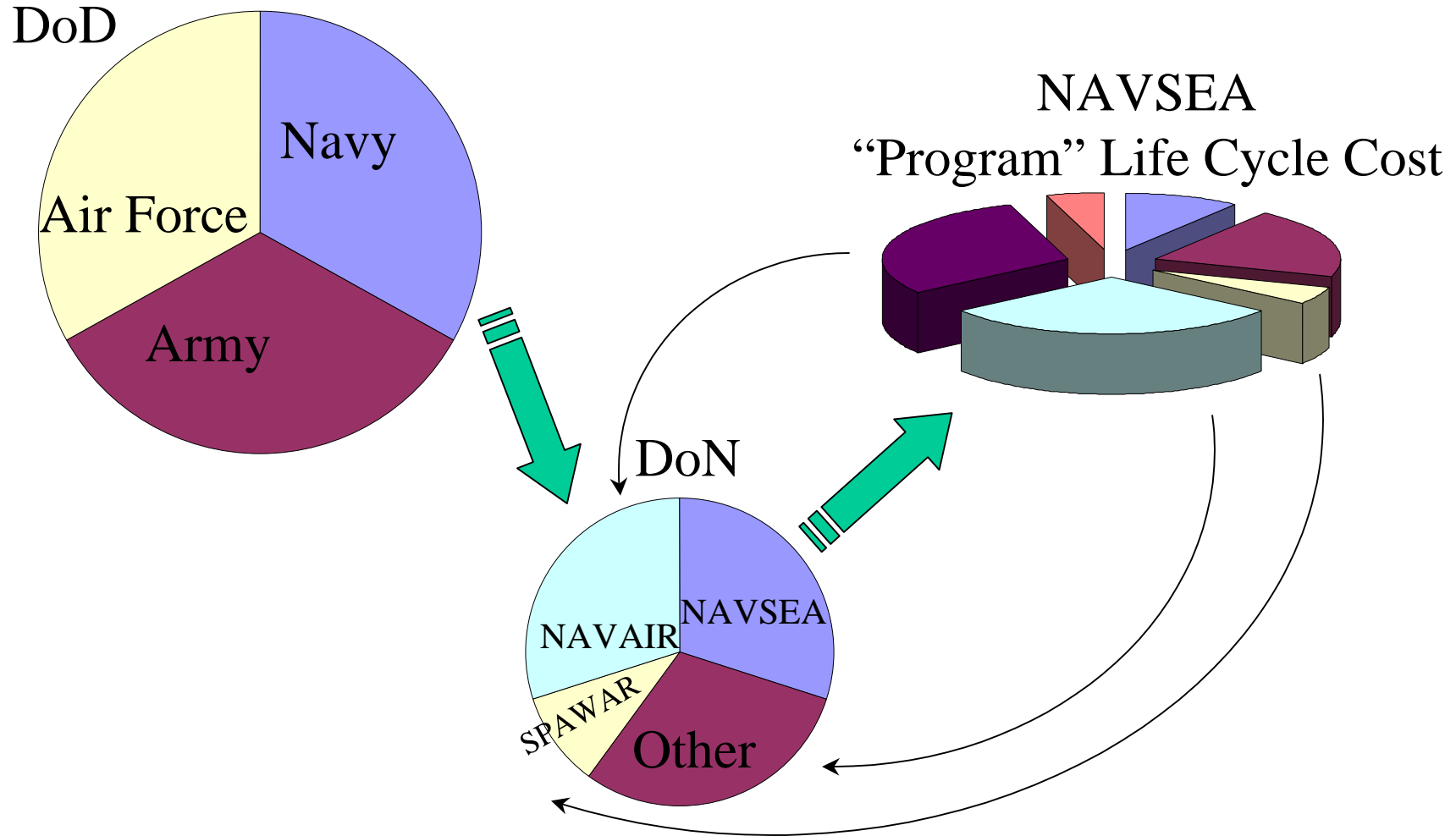
(* from R&D through disposal)



Bring the Warfighter, Operator, Maintainer and Trainer into the Picture



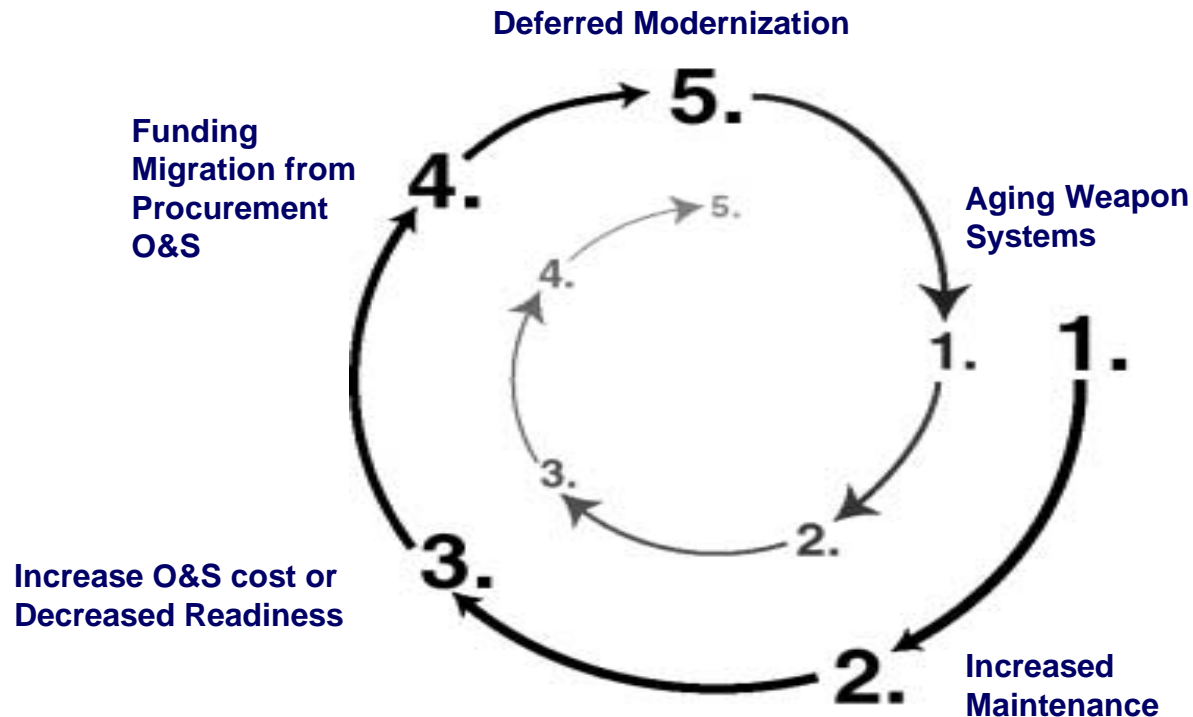
The TOC Pie Chart





WHY WE ARE HERE?

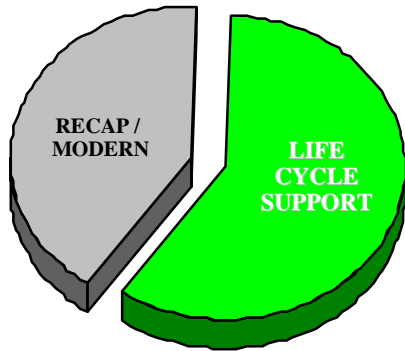
“DEATH SPIRAL”



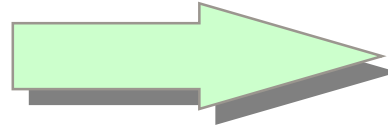
TOC REDUCTIONS ARE A MATTER OF INSTITUTIONAL SURVIVAL

R-TOC APPROACH

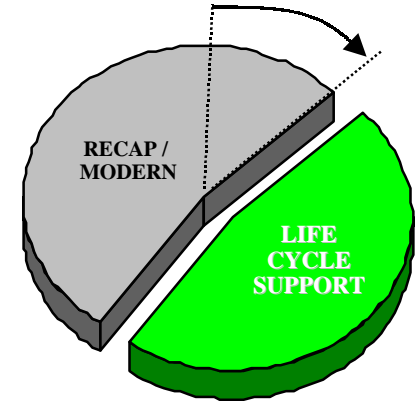
Current TOA



*SUSTAIN SAFETY
AND READINESS
REDUCE LIFE CYCLE
SUPPORT COSTS*



FUTURE



INVENTORY
MANPOWER
INFRASTRUCTURE
TECHNICAL DATA

- ★ Innovative Support Solutions
- ★ Reliability Investments
- ★ Single Process Initiatives
- ★ Partnerships w/ Industry
- ★ Technology Insertion
- ★ Reliability Warranties
- ★ Reinvention Initiatives
- ★ Reduced Cycle Time
- ★ Incentives

**Increase funds available
for recapitalization &
modernization**

AIR FORCE R-TOC PROGRAM

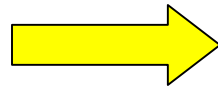
Three Main Objectives



1. Cost Control



2. Cost Reduction



3. Modernization Investment



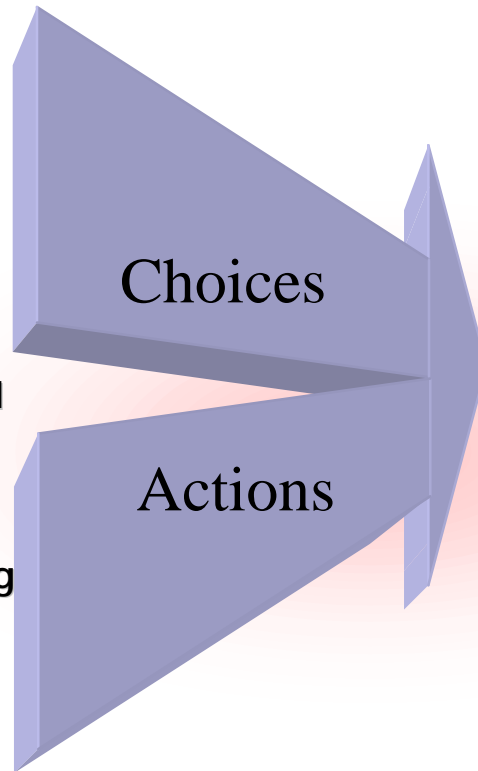
Must be focus of every person supporting Air Force mission!

- ***Operator/Sustainer***
- ***Acquirer (Development & Logistics)***
- ***Industry***

**REDUCING TOTAL OWNERSHIP COST WHILE MEETING THE
WARFIGHTER'S NEEDS**

DON's TOC Vision

- Cost As Independent Variable (CAIV)
- Commercial Operating & Support Savings Initiative (COSSI)
- Cost Reduction & Efficiency Improvement Council (CREIC)
- Weapon System Life Cycle Cost (LCC) Targets
- TOC Reduction: Future Naval Capabilities (S&T focused)
- Activity Based Cost Management (ABCM)
- Enterprise Resource Planning (ERP)
- O&S cost performance as an Operational Requirement
- Program 'gainsharing' and other incentives

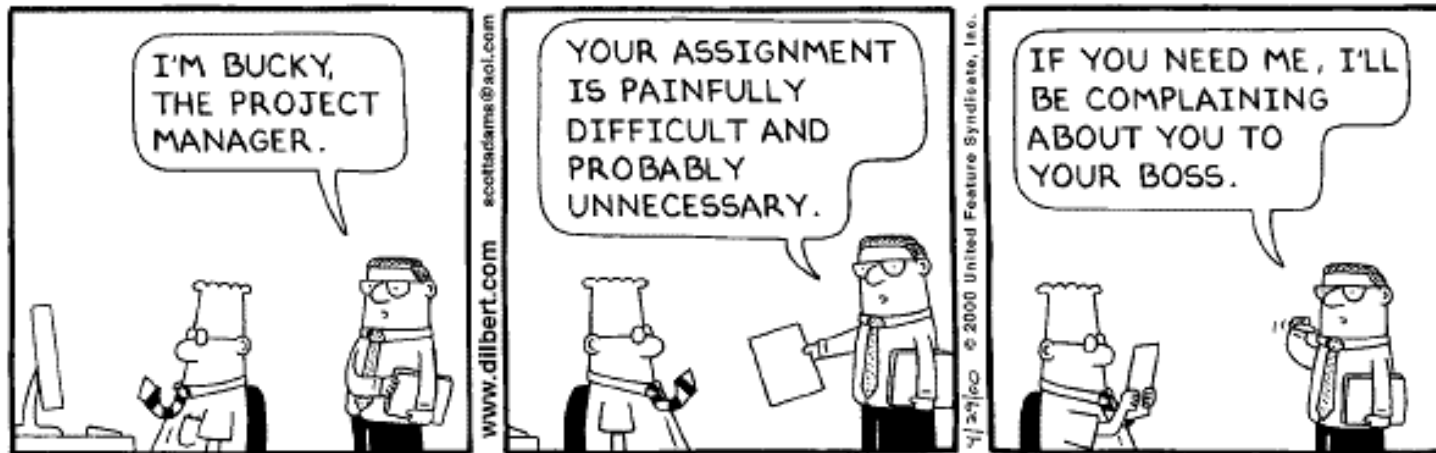


Every manager understands and continuously works to reduce costs while improving quality, efficiency, and performance.

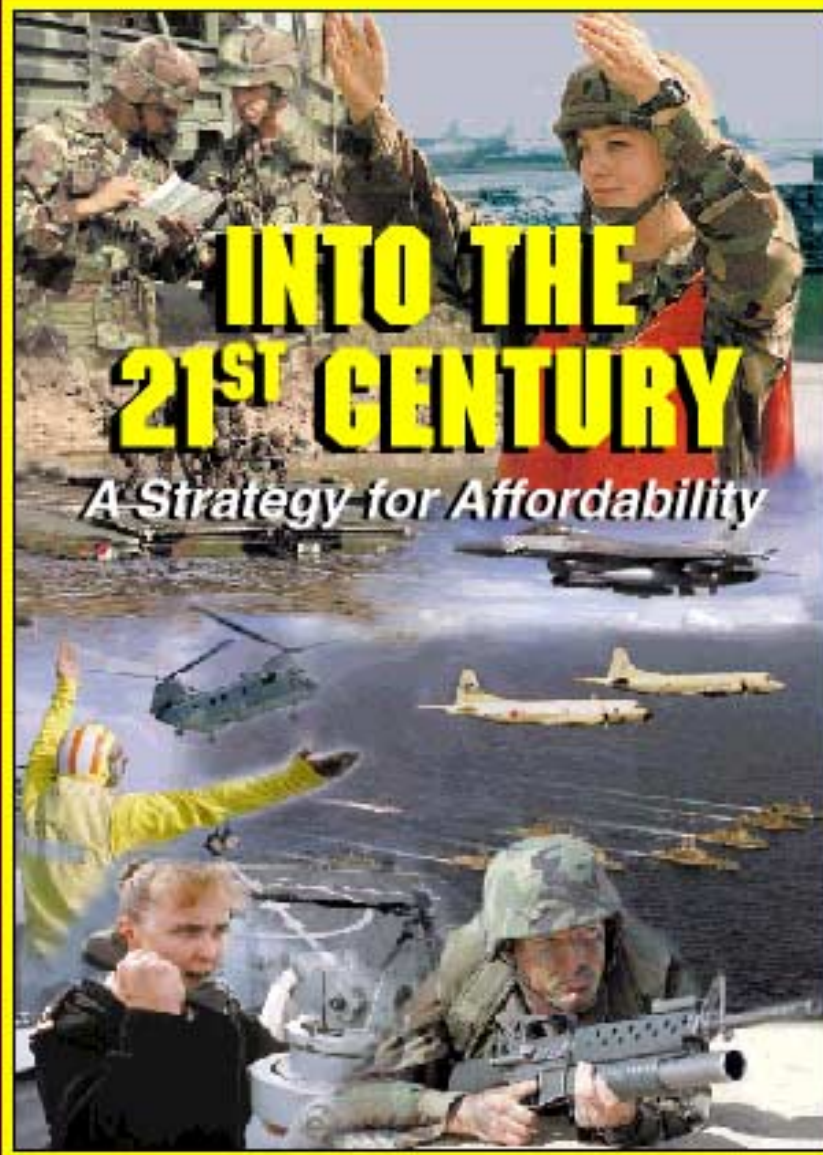
THE DEATH SPIRAL MUST BE REVERSED!



By Direction....



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Defense Systems Affordability Council (DSAC) Goal

“Field high quality defense products quickly; support them responsively”

- This is to be accomplished by:
 - Establishing accelerated cycle time processes as the norm; and
 - Re-engineering the logistics system.

Defense Systems Affordability Council (DSAC) Goal

“Lower the Total Ownership Cost of Defense Products”

- \$ For systems in acquisition; surpass or achieve aggressive “Cost as an Independent Variable” unit cost and total ownership cost targets (that are 20-50% below historical norms) for at least 50% of programs by FY 2000.
- \$ For fielded systems; reduce the logistics support cost per weapon system per year compared to FY 1997 baselines as follows:
 - » 7% by FY 2000;
 - » 10% by FY 2001;
 - » and a stretch target of 20% by FY 2005

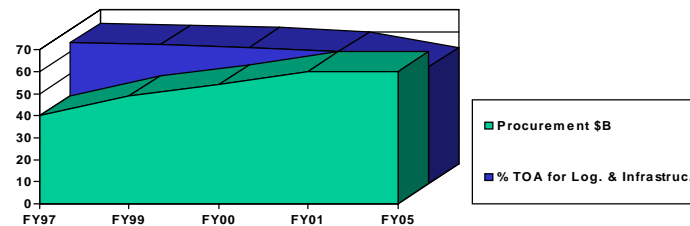
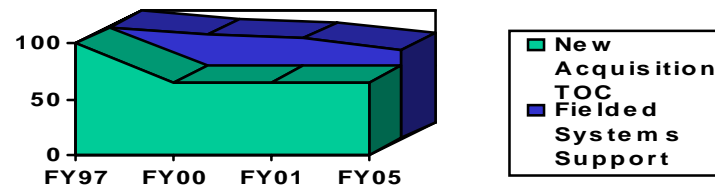
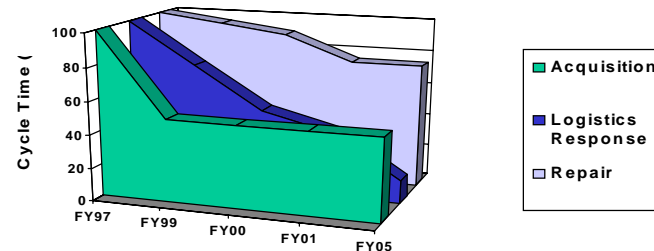
Defense Systems Affordability Council (DSAC) Goal

**“Reduce the overhead cost of the
acquisition and logistics
infrastructure.”**

- Specific efforts are:
 - Using people and resources efficiently;
and
 - reducing DoD infrastructure.

DSAC TOP LEVEL GOALS FOR DOD

- **Field High Quality Defense Products Quickly; Support Them Responsibly.**
- **Lower the Total Ownership Cost of Defense Products.**
- **Reduce The Overhead Cost of Acquisition and Logistics Infrastructure.**



THE YARDSTICK HAS BEEN ESTABLISHED



Navy TOC

- ASN(RD&A) Memo dtd 5 May 98
 - Required Formal TOC Program
 - Acquisition Program Baseline TOC Objective & Threshold
 - Cost Baseline, Cost Drivers, Initiatives & Metrics
 - TOC Reduction Plans
 - All ACAT and Non-ACAT, All Dollar Value, All Life Cycle
 - Involve all Stakeholders

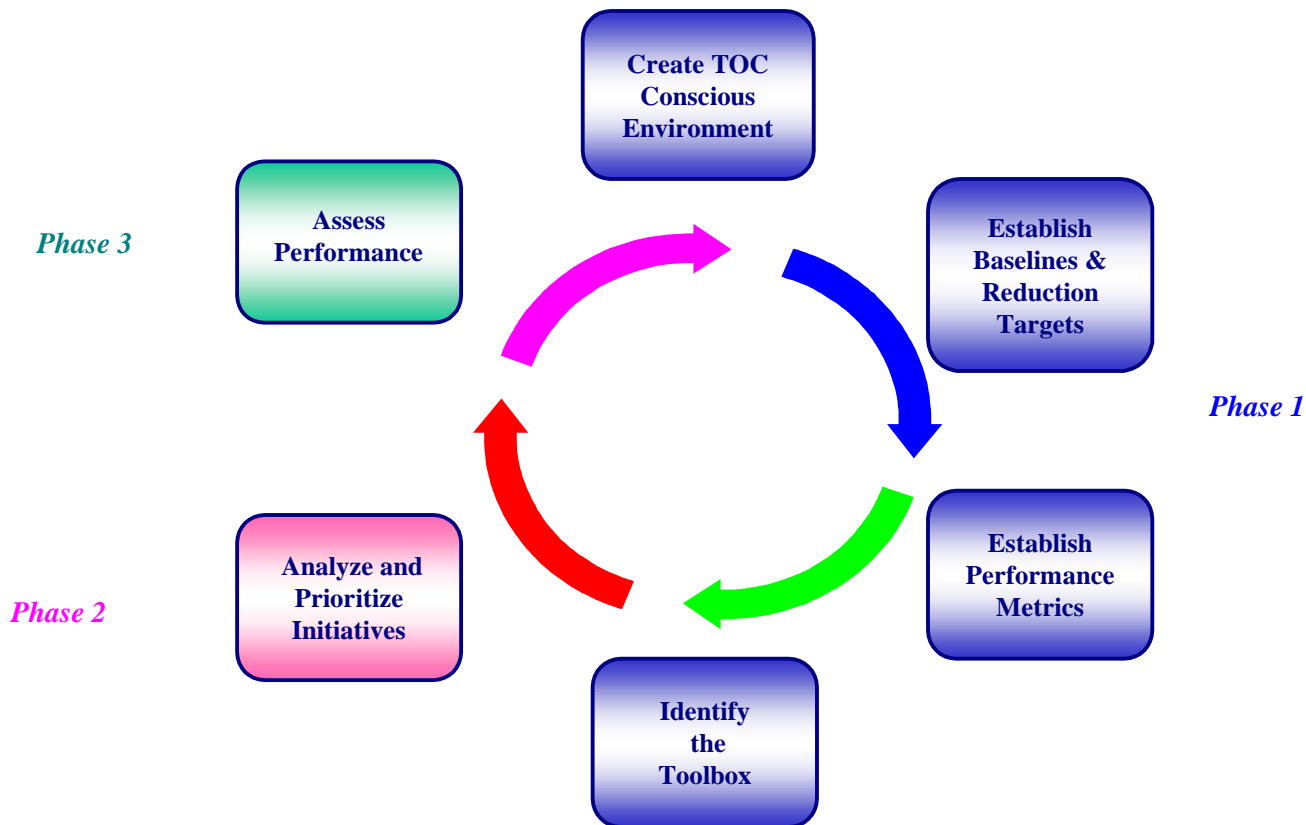


How?



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EXECUTING TOC



For more information about TOC contact Mr. Willie Jones DON TOC Team Leader at (703) 602-5506 or wjones@ar.navy.mil or go to the ARO Web Page at www.acq-ref.navy.mil

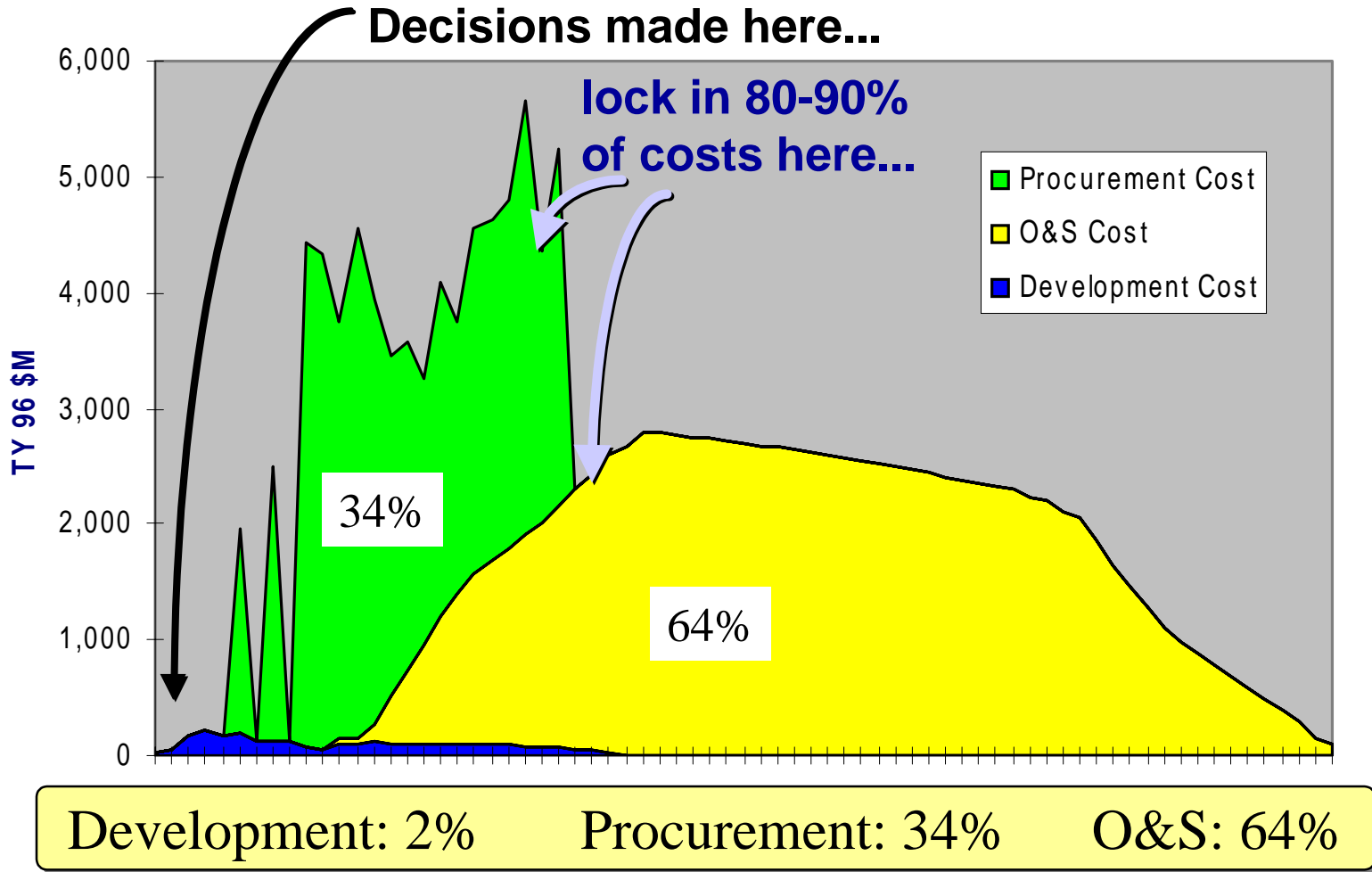


Baselines

- Program Baseline
 - Budget Baseline
 - TOC Baseline
-
- What Fiscal Year Should I be using?
 - Can I Change My Baseline?
 - Who Establishes My Baseline?

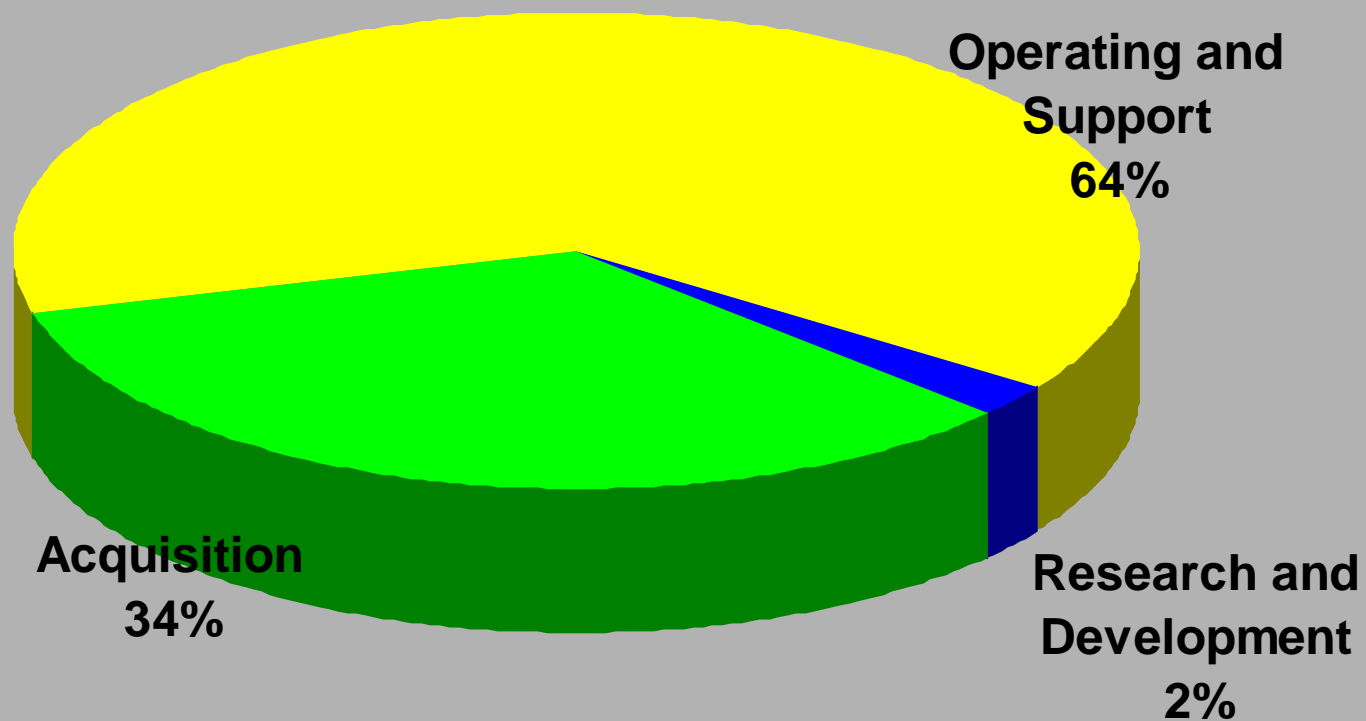


SURFACE COMBATANTS LIFE CYCLE COST



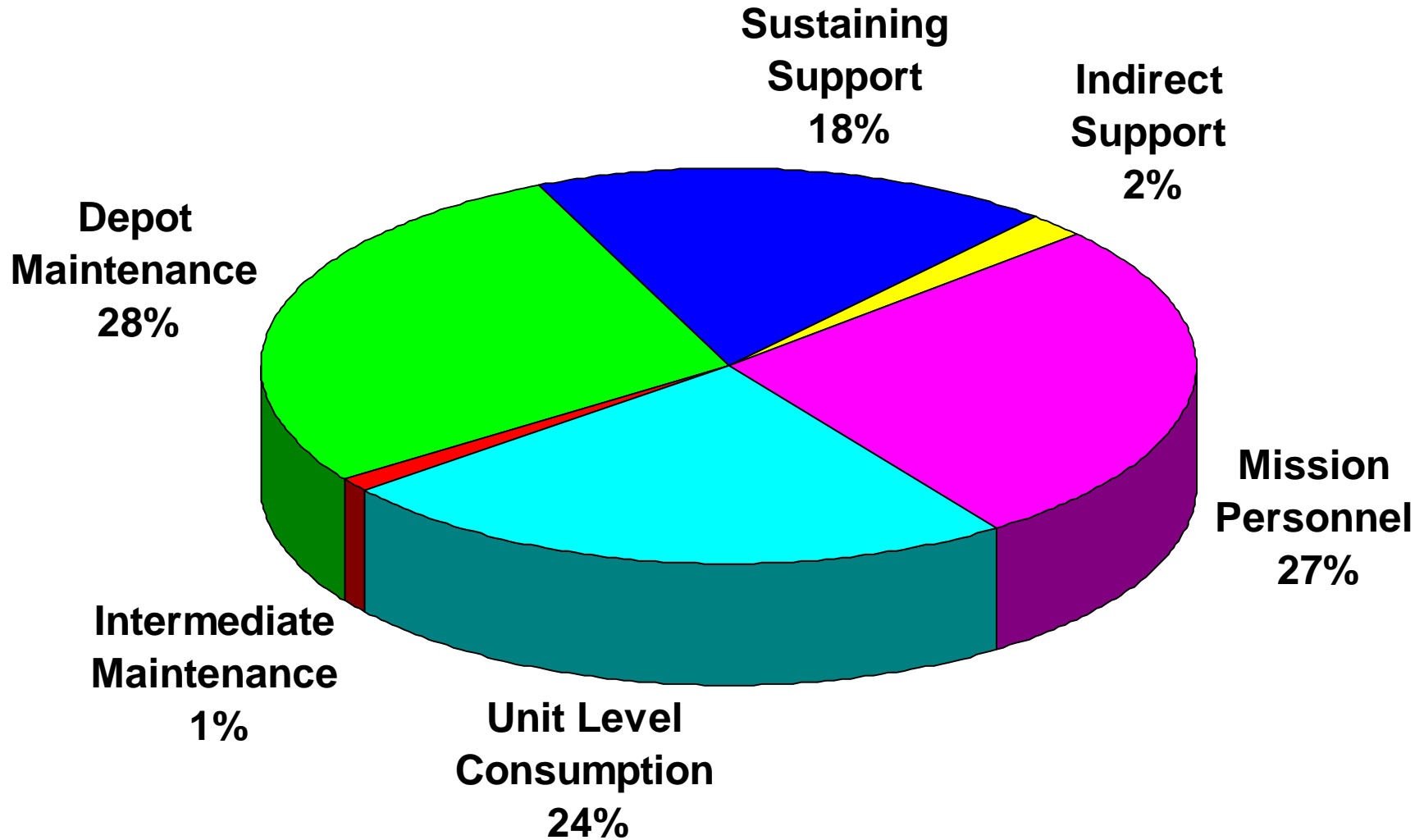


SURFACE COMBATANTS TYPICAL LCC COST



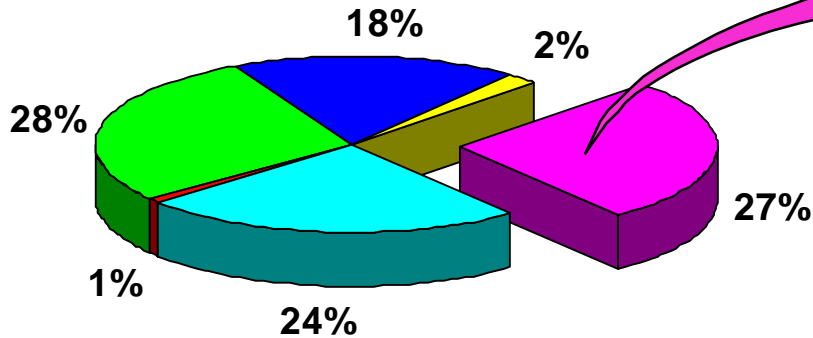


SURFACE COMBATANTS O&S COST





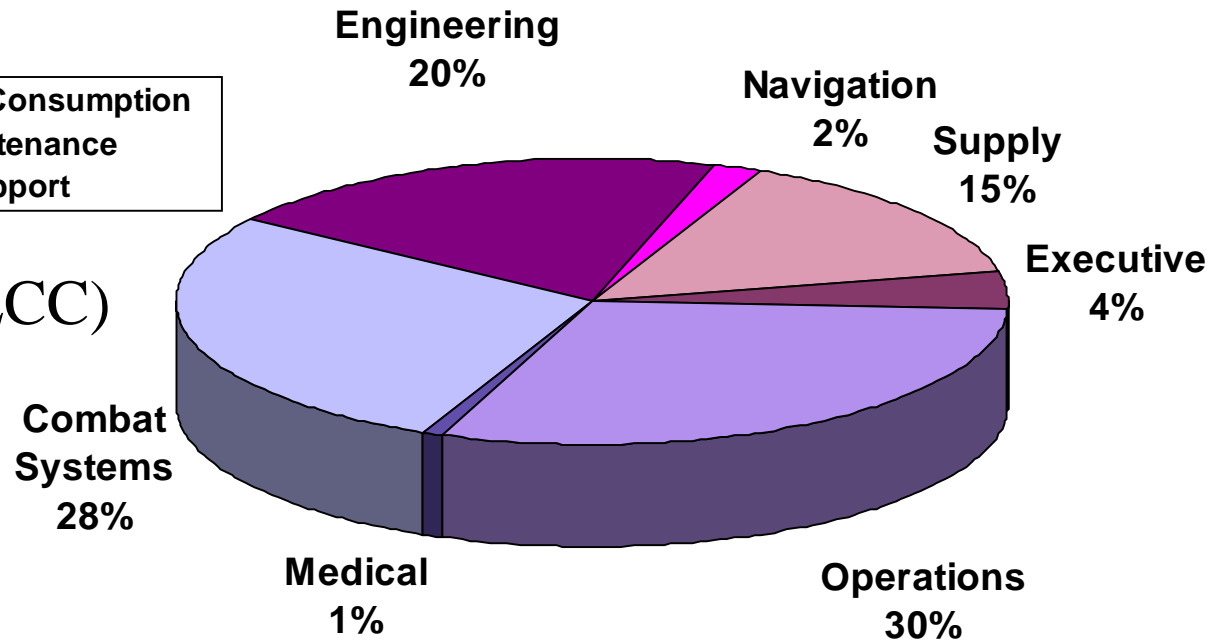
SURFACE COMBATANTS O&S



- | | |
|--------------------------|------------------------|
| Mission Personnel | Unit Level Consumption |
| Intermediate Maintenance | Depot Maintenance |
| Sustaining Support | Indirect Support |

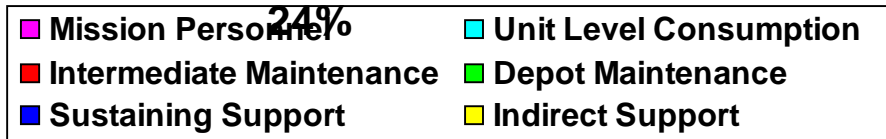
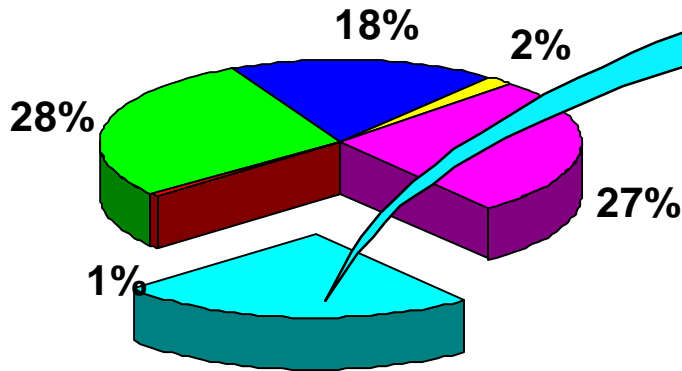
(26% of O&S, 16% of LCC)

CREW COMPOSITION

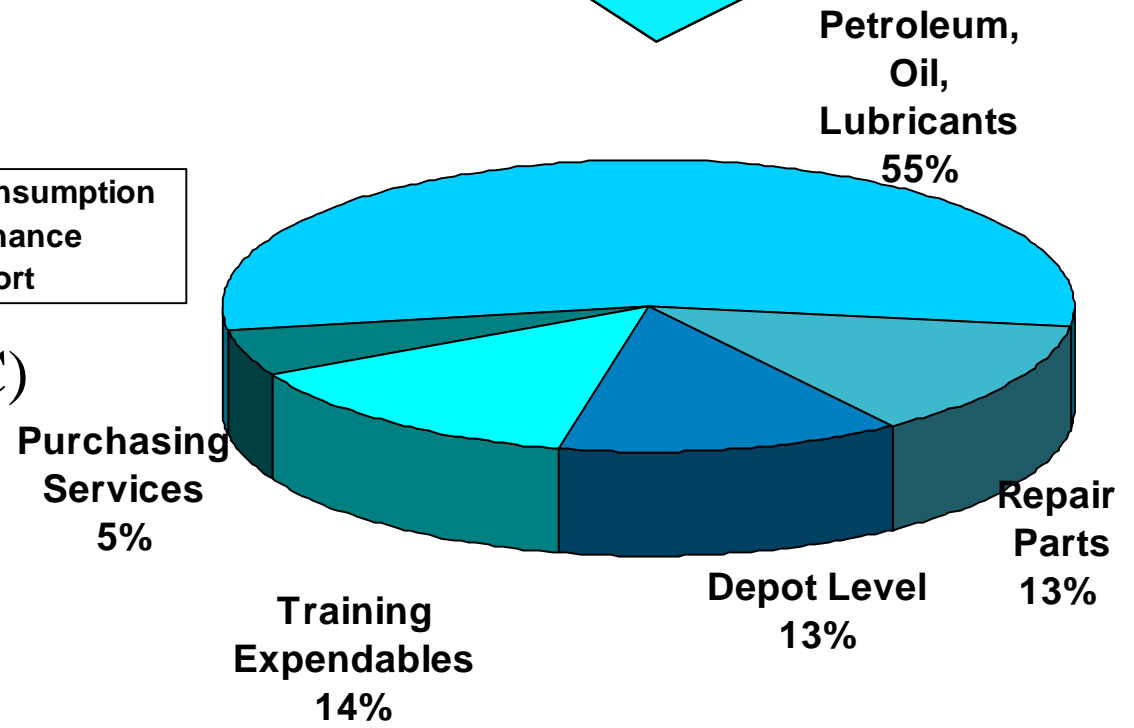




SURFACE COMBATANTS O&S UNIT LEVEL CONSUMPTION

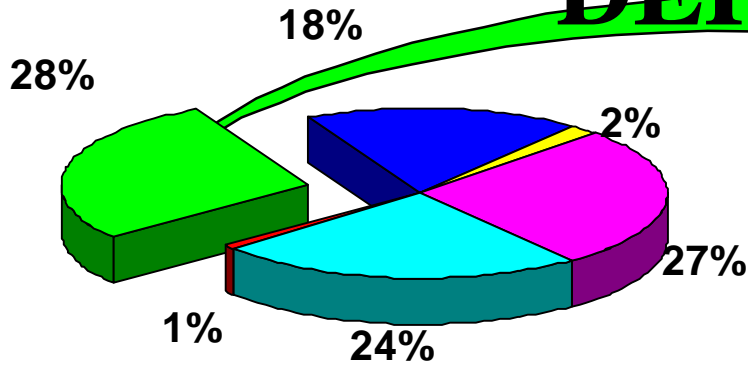


(24% of O&S, 15% of LCC)



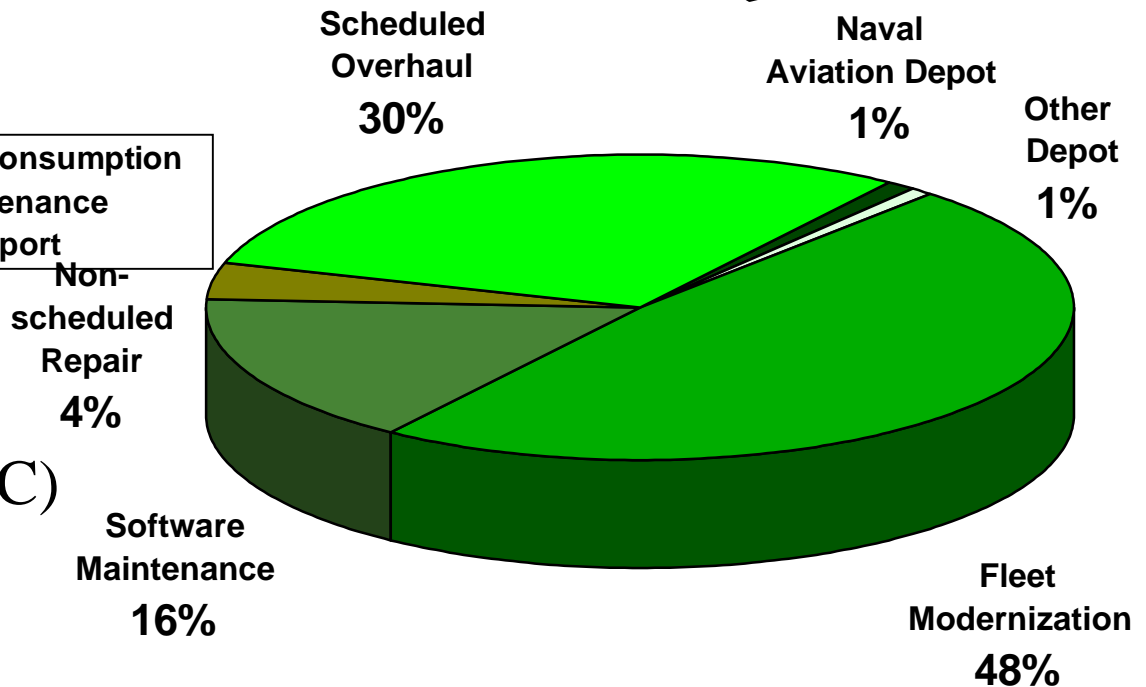


SURFACE COMBATANTS O&S DEPOT MAINTENANCE



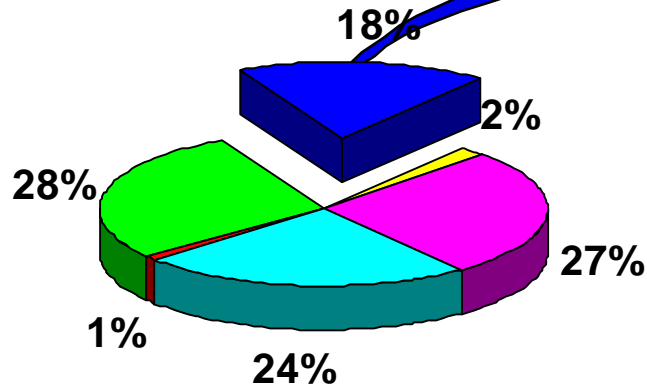
- | | |
|--------------------------|------------------------|
| Mission Personnel | Unit Level Consumption |
| Intermediate Maintenance | Depot Maintenance |
| Sustaining Support | Indirect Support |

(24% of O&S, 15% of LCC)



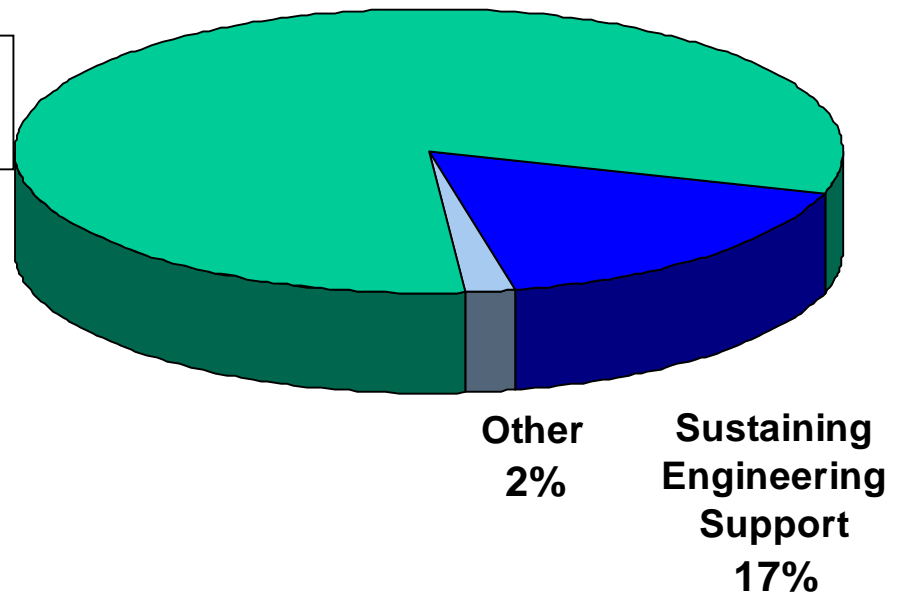


SURFACE COMBATANTS O&S SUSTAINING SUPPORT

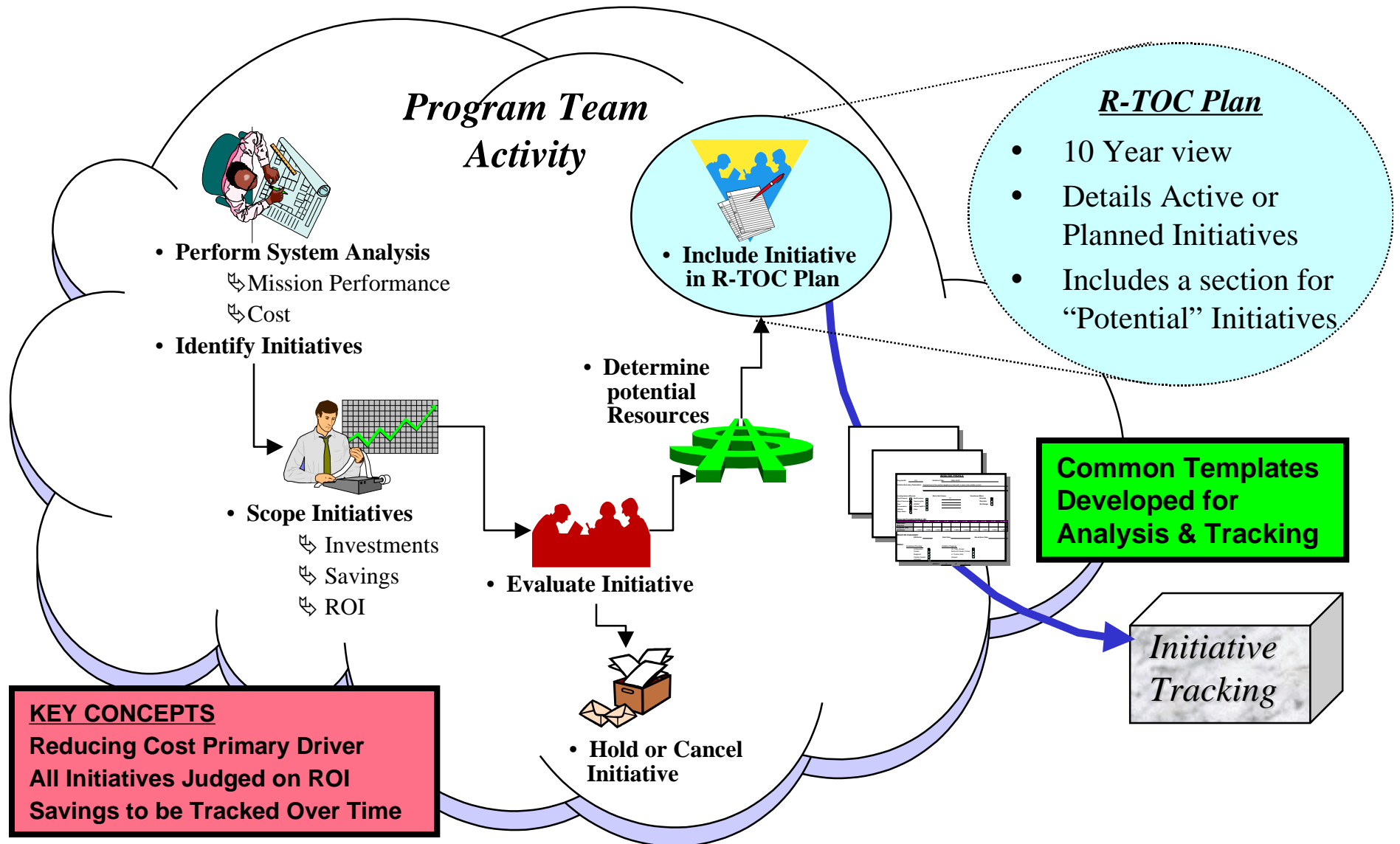


(23% of O&S, 14% of LCC)

Central Provisional Material
82%



R-TOC PLANNING PROCESS





R-TOC Plan

- Purpose
 - PM Tool to Identify & Communicate
- Content
 - Program Life Cycle Cost BASELINE
 - Major Cost Drivers
 - Cost Saving Initiatives POA&M
- Requirement
 - Periodic Reporting



R-TOC Plan

- No ASN Direction on Updates
- Maintain Plan By Attaching Initiatives
- Naval Audit Service “Reviewing” TOC Plans & APBs



Refocus

TOC & CAIV ... how do they relate, differ?

- *CAIV* is a *process* - a way to reduce costs
- *TOC* is a *domain* - a set of costs to be reduced
- *TOC Reduction* is a *program* - a set of processes
 - *TOC Reduction* seeks to change:
 - *What we acquire*, usually addressed by CAIV
 - *How we acquire or operate* a system, addressed in a number of ways, in order to reduce cost

Also Called
“TOCR” or
“Reducing TOC
(R-TOC)”

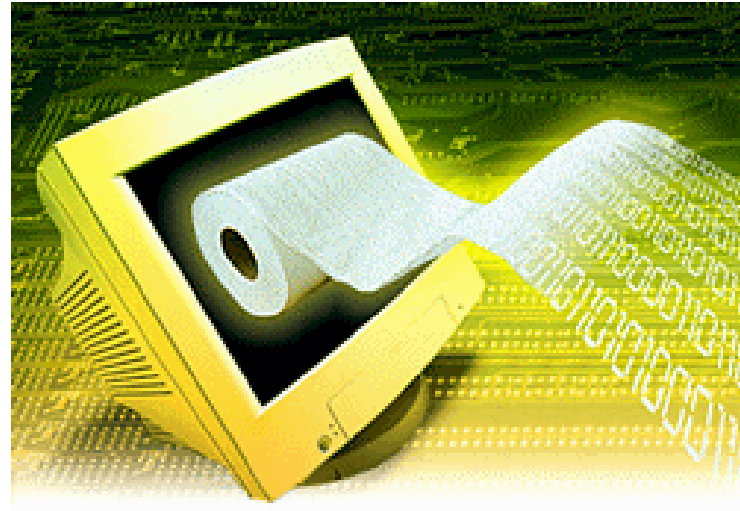


***“CAIV is a verb,
TOC is a noun!”***

- Bob Jones, NSW-C-D



Tools



Data Collection

Predictions

Data Management

Communication

Analysis

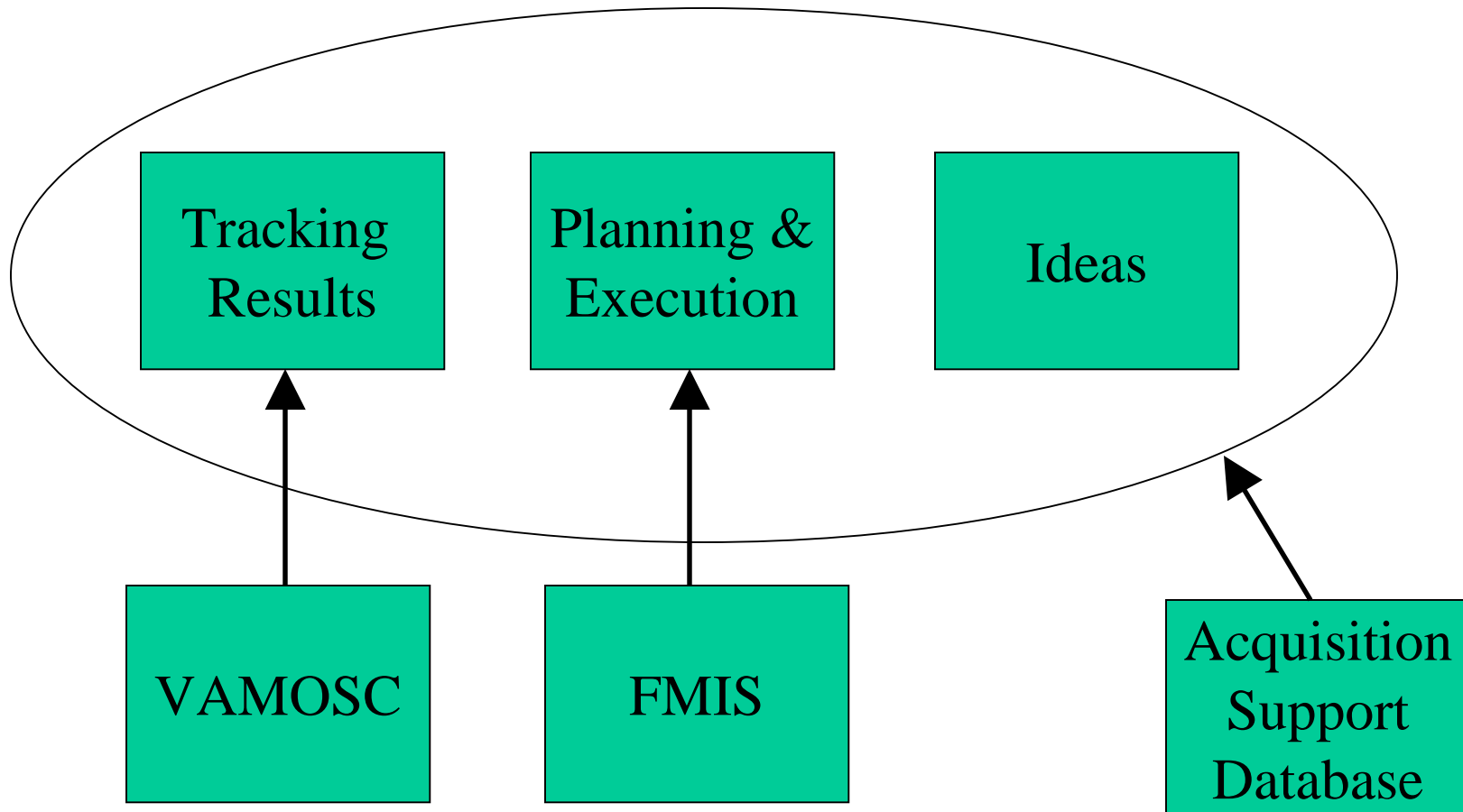


TOC Info Mgmt System

- Track Command Investments in R-TOC
 - Accurate, Timely, Complete
- Tool for Sharing Ideas
- Tool for developing TOC initiatives



TOC Information Management System



Navy VAMOS

Visibility And Management of

Operating and Support Costs

- 478 Ships
- 58 Shipboard systems (primarily electronics)
- 71 Aircraft Type/Model/Series
- Aircraft subsystems
- 17 Tactical missiles
- 3 Torpedoes
- 17 Tracked/wheeled vehicles

<http://www.NCCA.Navy.mil/products.htm>



TOC Reduction & VAMOSOC

- **How Do We Manage Operation & Support Costs?**
- **Requirements**
 - **Predict O&S Costs**
 - **Track O&S Costs**
 - **Reduce O&S Costs**

Need to Understand Cost Drivers



TOC Reduction & VAMOSOC

What Other Data Sources for O&S Cost are there?



SHIPS' 3-M, OARS, SHIPS' 3-M REFERENCE, OWNERSHIP COSTS, CDMD-OA, ICAPS, RBS, MFRF, OPNAVINST 4790.4C, CRAMSI, ICMP, LMSA, COSSI

<http://www.nslc.navsea.navy.mil/index.htm>



VAMOSC

NAVSEA	FY-2	FY-1	FY0	FY1	FY2	FY3	FY4	FY5	FY6	FY7	FY8
--------	------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----

VAMOSC Collects the data											
Data	Data	Data									

OSCAM Projects the O&S Baseline Data										
<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>	<i>Data</i>

Investments made & savings projected					CPF, CR&EI, LECP					
<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>	<i>Savings</i>

VAMOSC Collects the data											
Data	Proves Return on Investments										

OSCAM Updates the O&S Baseline Data										
<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>	<i>Better Data</i>

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**Configuration
Identification
of
Expenditures,
Work Hours,
Fuel,
MUST have a
Common
Definition**





How Do We Communicate?

TALK TO EACH OTHER!

- Focused Meetings
 - PEO/Directorate POCs
- Inter & Intranet Web Pages
- Setting up “Livelink” Workspace
 - Internet Accessible, Password Protected
 - NAVSEA ART Has Lead
- Navy ARO Knowledge Share Space



Sources Of Funding



Corporate Productivity Fund

CPF

CR&EI

ARI

How Do they fit together?

Objective - Collect, Evaluate, Rank and Recommend Investments That Reduce the Total Ownership Cost of Navy Systems.



Fundamental Ground Rules

- Self-Starting, **Self-Sustaining**
 - Highly Specific Projects
 - NAVSEA Pays Own Way Via Wedge or Efficiencies
 - One Time Injection of Funds Without Future Funding Tail
- **If the Initiative Requires Investment Funding Beyond FY00/01, Proposal Must Indicate That This Is Already in FYDP or POM**
- For FY00/01 Funding Is O&M,N
 - Must Conform to the Appropriate Use of O&M,N Funding
- Benefit to Investment Ratio of **Greater Than 8:1** Over the Period FY00-09
 - Savings Do Not Have To Be NAVSEA's \$'S
 - **Payback Should Occur Within Three to Five Years**
- All Initiatives Submitted With PEO or Directorate Endorsement



Importance to the Corporation

- **Why This Effort Is Important to the Corporation**
 - Increases Customer Satisfaction With Our Products
- **What This Means to NAVSEA**
 - Meets Specific Goal
- **What the Benefits Are**
 - Maximizes Navy Lethality in Constrained Budget
- **What the Risks Are**
 - Lack of HIGH Level Commitment
 - Perception This Is “Just Another Fad”



FY01 CPF Evaluation Progress

- 74 Initiatives Received
- Initial Reviews Complete 5/26/00
- 6/1/00 Show & Sell for those in Questionable Range

FY01 CPF Submits	
Strike	1
EXW	3
SEA 04	8
Carriers	10
MUW	11
SEA 05	13
TSC	13
SUB	15
Total	74



FY01 CPF Schedule

- Draft Score & Advanced Questions 26 May
- “Show & Sell” Briefs 1 June
- Final Scores From Tech & Cost 15 June
- BTET Brief 5 July
 - Read Ahead Due 22 June
 - Final Brief Due 29 June
- Final Decision 21 August at NEC



Green - Yellow - Red

Pass/Fail	Pass		Fail
Out Year Funding Appropriate use of O&M,N	None/Severable Pass		Required Fail
Ranking Considerations	Green	Yellow	Red
Technical Score Cost Score Benefit ratio Payback Period Size of investment	Upper Group	Mid Range	Lower Group
Tie Breakers & Discussion Items			
Work Load Reduction & Quality of Life Impact - Process change verses one time fix Political - supported by CR&EI, Smart work, Pilot Program, last years' CPF, etc Produces "True Savings" for next years' CPF			



FY01 CPF Summary

- Team Effort lead by SEA 017
- Applying Lessons Learned from FY00
- CPF is funded with O&M,N
- Target amount for FY01 is \$26.352M



FY00 CPF Status

- 21 Initiatives Funded
 - 2 Withdrawn
- \$14.184 Allocated
 - \$1.343 Reallocated To Command Reserves



FY00 CPF Initiatives

11	Replacement of Mooring Lines
18	Anti-Stain Exterior Finish Coating for Vertical Surfaces
75	Hybrid Gaskets
150	Comprehensive Industrial Pollution Prevention Initiatives
154	Composite Magnetic Switches For SSN 688 VLS
200	Finalize Dabob Bay Area Environmental Assessment
240	Support Funding for Replacement of Obsolescent General Purpose Electronic Test Equipment (GPETE)
900	SternFlap Retrofit CG 47 Class (CG 47 through CG 73)
301	AEGIS CIC Integrated Foundation and Raised Deck Installation
430	Stern Flap (DDG51)
450	SEALINK2000
472	Paint Dispensers and Paint Brush Holders
723	Recycle Facility for disposal of Mercury Batteries
793	Stratica Deck Covering
1000	Install Stratica Deck Tile in CVN 70 and CVN 71
1015	Submarine Mast Lifting and Safety Improvements
1370	USS KITTY HAWK (CV 63) Electronic ABC System Installation
1650	Gel-In-the Middle Connectors
2880	Install JP-5 Radar Tank Level Indicators (TLIs) in CVN 70& CVN 71



Cost Reduction & Effectiveness Improvement Council



Cost Reduction & Effectiveness Improvement (CREI) Process

- Annual review to assess and prioritize investments that:
 - Yield high return on investment (savings)
 - Reduce workload
 - Enhance quality of life
 - Improve readiness
- Quality corporate-level decisions
 - Council Co-chaired by Navy Secretariat, OPNAV, and HQMC
 - Representation includes Secretariat, OPNAV, HQMC, and Fleet
- Positive incentives for claimant participation:
 - Protection of unrealized savings
 - Visibility
 - CREI Council policing action
- Annual Report to DoN leadership
- **Integrated into the PPBS**

CREI Objectives - More than R-TOC

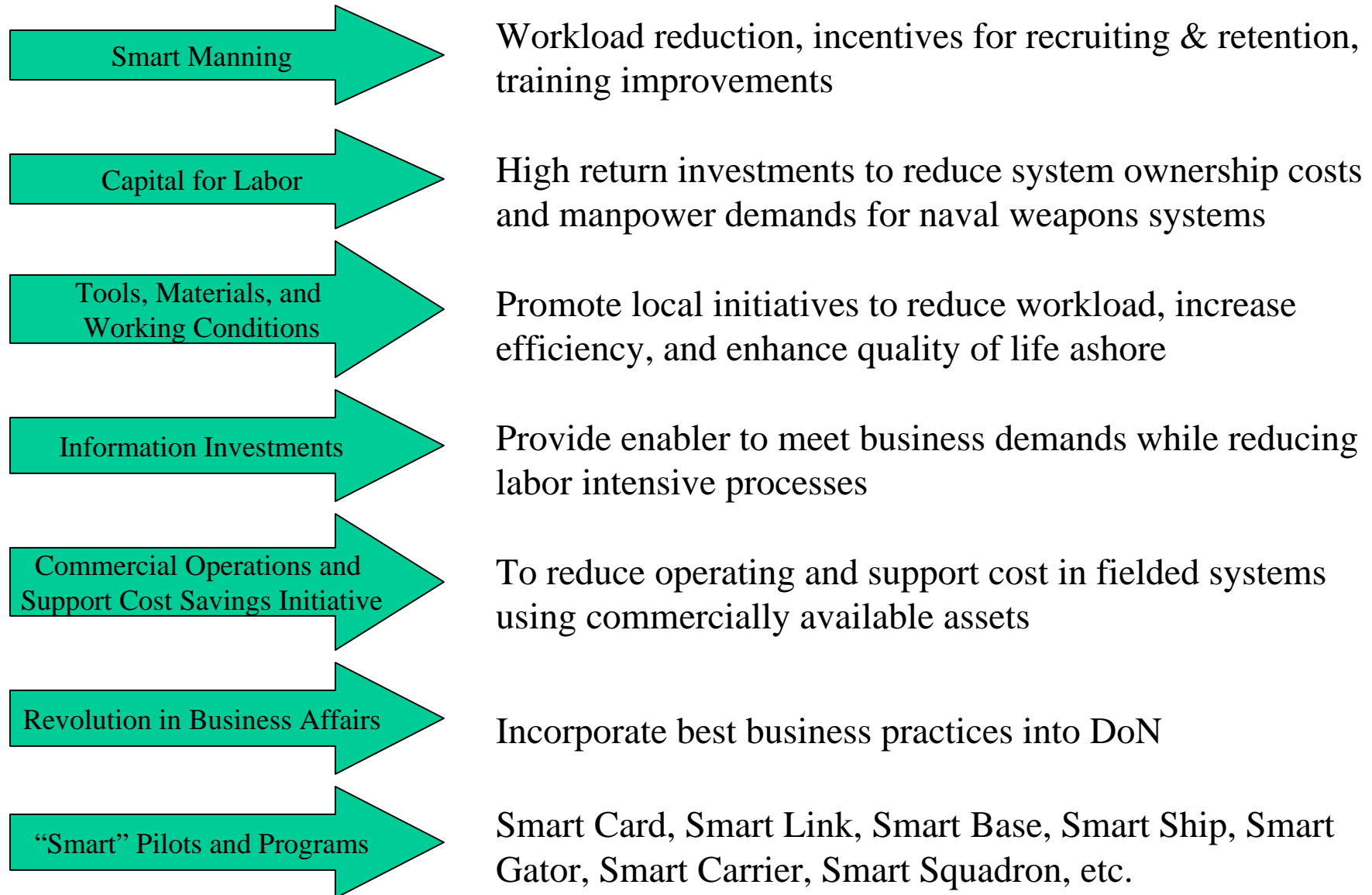
- Cost Reduction
- Workload Reduction
- Readiness/Performance Improvement
- QOL Enhancement

Prioritization Process

- Initiatives prioritized based on:
 - Stakeholder priorities (weighted toward operators)
 - Cost/benefit analysis (IRR)
 - Risk/confidence analysis
 - Council ranking of selected initiatives
- Prioritized list is a tool used in the normal POM and budget processes
- DoN leadership has opportunity to corporately fund initiatives at end of the programming phase and throughout the budgeting phase
 - Acquisition Program Stability Reserve Fund potential source of venture capital

Backdrop to CREI

Many Processes, Many Products



Backdrop to CREI

Business Practice Shortfalls

- Few incentives for risk taking
- No incentive to invest if savings fall to another organization
- Investment decision process sub-optimized
 - Fragmented efforts
 - Different groups with different standards



COSSI

Come back in the afternoon to learn exactly what COSSI is



LECP

<http://www.navsup.navy.mil>

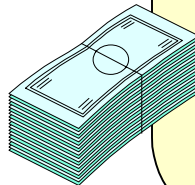
Background...LECP Program

LECP...

A reliability or maintainability related ECP for a Naval Inventory Control Point managed item, funded with NWCF and bought out by operating units with OMN, designed to reduce or eliminate support costs while maintaining or improving safety and performance.

Bottom Line...

High return investments that help cut system ownership costs.



Criteria has evolved over life of LECP program

Investment Criteria:

FY92: Breakeven in 3 Years

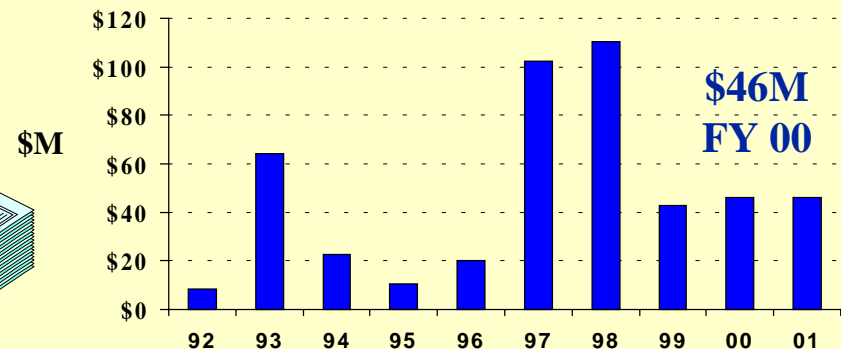
FY93: Breakeven in 5 Years

FY96: 2 to 1 ROI in 10 Years

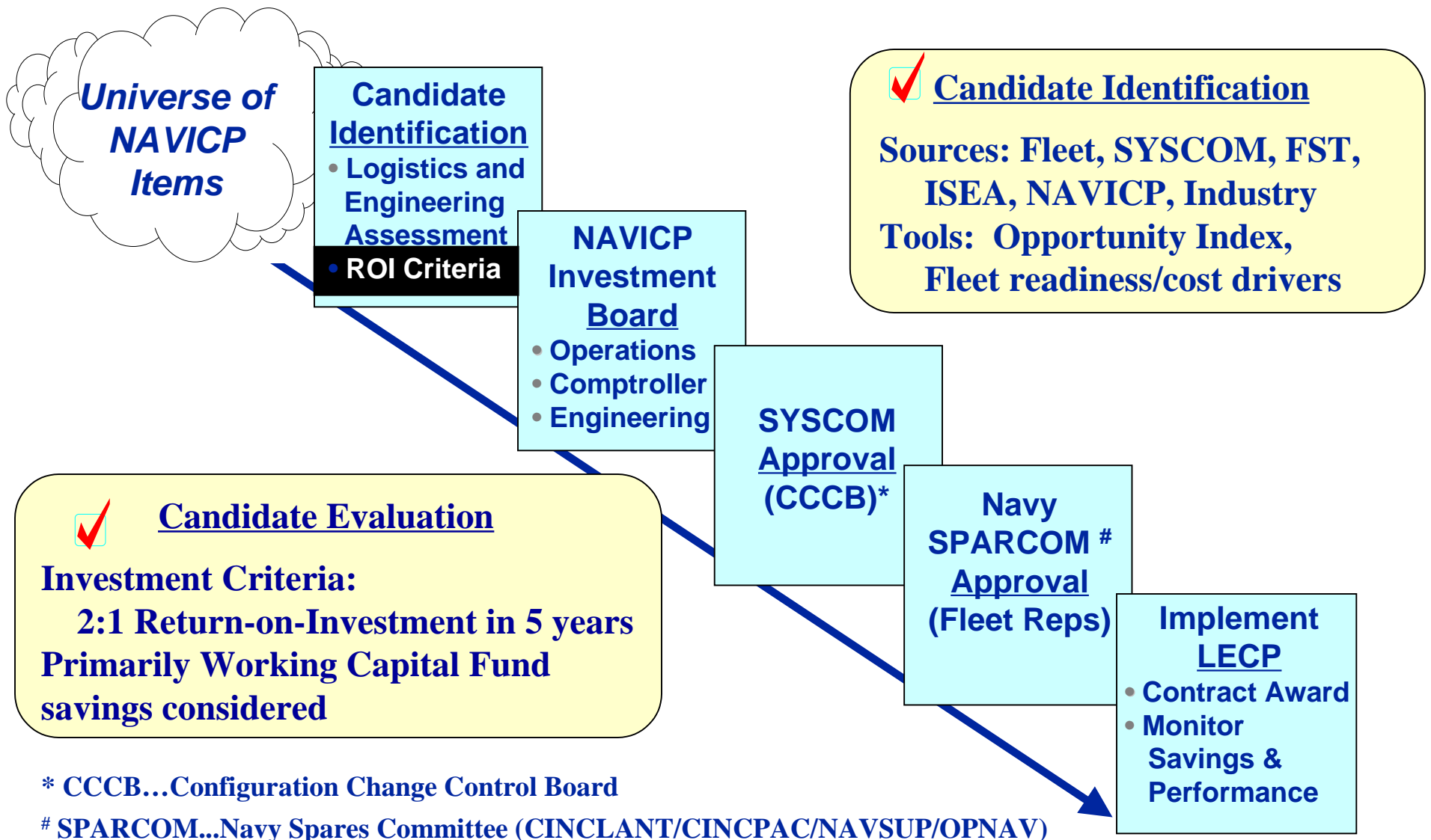
FY99: 2 to 1 ROI in 5 Years (start at 1st obligation)

FY00: 2 to 1 ROI in 5 Years (start at 1st installation)

NWCF Investment Level:



LECP Process





R-TOC Pilot Programs

- "Common Ship"
- CG-47 Class Cruiser
- LPD-17
- CVN 68 Class Aircraft Carriers
- What Have We Learned So Far...

R-TOC Pilot Programs

(Section 816 pilots (10) shown in boldface)

Army R-TOC Pilots

M-1

HEMTT
HIMARS
Guardrail

AFATDS

RAH-66
ITAS

Apache

CH-47
Crusader

Navy R-TOC Pilots

SLAM-ER

AAAV
MTVR
Common Ship (cross-cutting)

ASE

CVN-68
LPD-17

H-60 Series

EA-6B
Aegis Cruisers

Air Force R-TOC Pilots

F-16

AWACS
SBIRS

C-5

C-17
JSTARS

B-1

F-117A
Cheyenne Mtn

C/KC-135

Development of PBD

- Identification of unfunded initiatives led to opportunity for a budget proposal
- Services developed specific budget justifications for a handful of key R-TOC projects
 - > 3:1 return to investment ratio desired
 - Payback within the FYDP desired
 - Additional reasons for the projects (warfighting improvements, RM&S, workload reduction, quality of life, etc.)
- ~\$13M in R-TOC funds for FY01 approved; Services instructed to fund other initiatives

Lessons Learned:

R-TOC Management and Funding

- Advantages and disadvantages of being a Pilot
 - Additional work for program office staff
 - Visibility improves resource claims
- Metrics are needed
- Team participation required
 - PM organization, buying command, user, manufacturer
 - User involvement and support is particularly important
- R-TOC initiatives must be coordinated with buying command budgetary processes
- “Color of money” is a significant issue

Lessons Learned: RM&S Improvements

- Difficulty of obtaining sustaining engineering funds for out of production systems
- Major modifications provide best opportunity to implement O&S cost reductions and readiness improvements in legacy systems
- One-/few-of-a-kind systems provide unique challenges
- Focus on O&S cost drivers/readiness inhibitors can provide the best results

Lessons Learned: Cycle Time/Supply Chain

- Extension of depot maintenance cycles can reduce O&S costs
 - Grouping depot maintenance activities differently, using actual experience
- Cost savings potential through supply chain management process and efficiency improvements
 - Corporate contracts, DVD, reductions in DLA recovery rates, etc.

Lessons Learned: Competitive Product Support

- Competing traditional depot workload can reduce O&S costs significantly
- Some legislative relief (e.g., A-76 procedures, 50:50, core logistics capabilities) may be required to realize potential savings
- Difficult to implement for legacy systems
 - Major modifications provide an important opportunity
- Incorporating improvements that occur in the marketplace can reduce O&S costs
 - e.g., commercial products and technologies



Challenges

- Improving Availability of Investment Resources
- Incentivizing Program Teams Is Key to the Success of Reducing TOC
- Cost Reporting Systems (e.g. VAMOSOC) Must Be Improved to Insure Timeliness and Completeness
- Top Management Commitment Is Critical
- Reduction of Total Ownership Cost Must be Expanded Beyond the Acquisition Community



Summary

- Develop Baselines With Same Tools That Will Be Used to Track
- Cost Saving Initiatives Can Come From Anywhere
- There Are Sources Of Funding For Innovative Ideas
- Everybody understands and continuously works to reduce TOC



Conclusion

- Reducing Total Ownership Program In Place
 - Establishing Baselines
 - Defining Specific Initiatives
 - Results Drive Ownership Cost Targets
 - Tracking Execution
- Programs That Have Gone to Milestone Decisions over the Last Year Have Included Major TOC Reductions in their Baselines
- Innovative Approaches Are Being Used
 - Support Concepts
 - Technology Insertion
 - Process Improvement
- We Have Changed Our “Corporate” THINKING!
 - Reducing Ownership Cost is a Primary Goal of Every Program Manager