

**Lean Aerospace Plenary Conference**  
**Fleet Ballistic Missile Program**  
**Lean Success**  
**24 March 2004**



**Capt. Steve Lewia,**  
**Commanding Officer,**  
**Program Management Office**  
**Strategic Systems Programs**  
**Flight Systems**

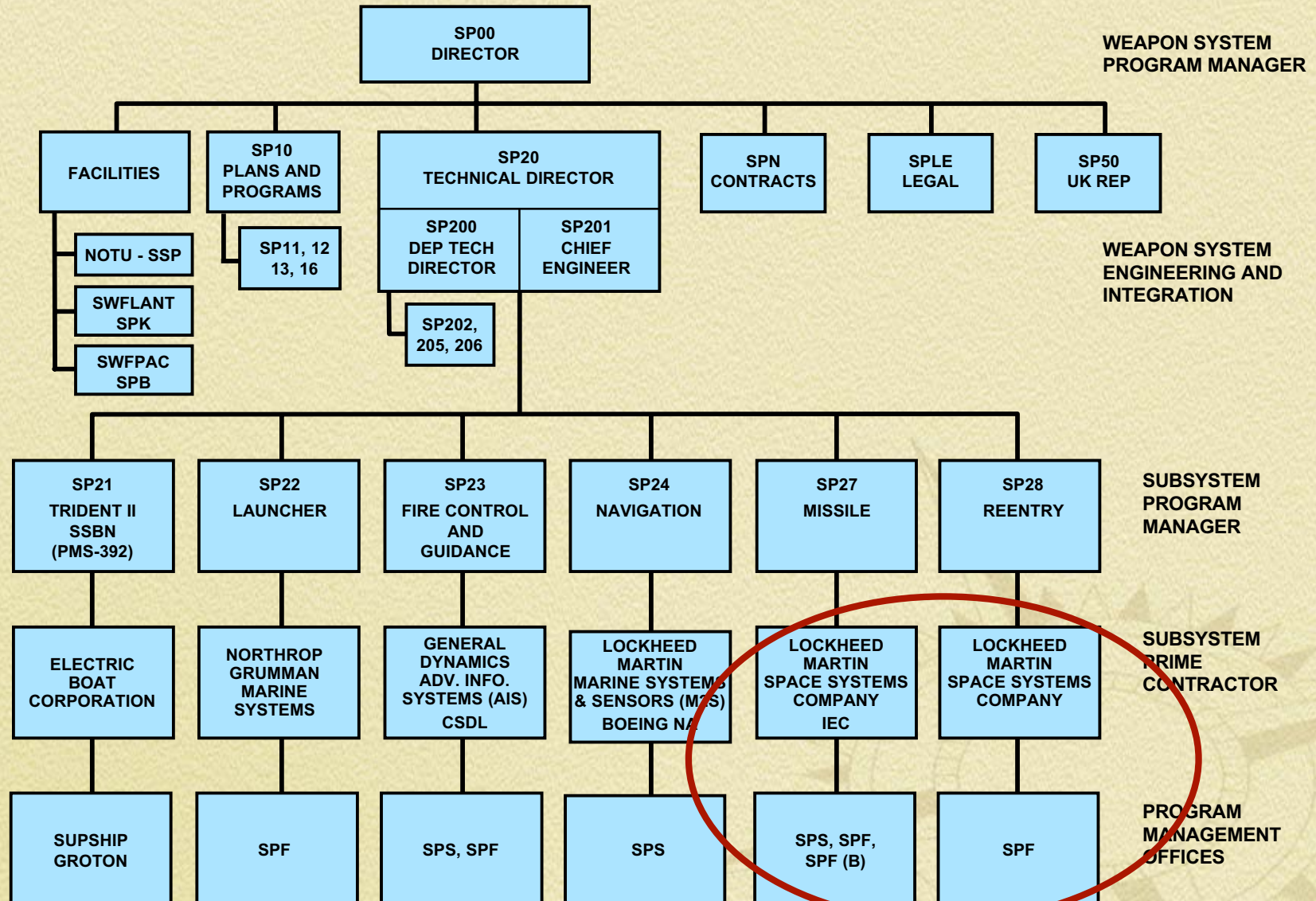
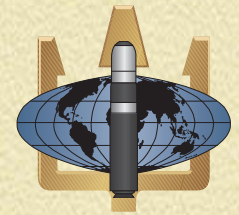
**R.M. Williams,**  
**Director & Chief Systems Engineer**  
**Systems Engineering, Integration & Test**  
**Strategic Missile Programs**  
**Lockheed Martin Space Systems Co.**

**SSP**



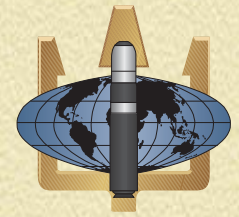


# TRIDENT Program Government / Industry Team



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# FBM Team Life Cycle Responsibilities



## Cradle to Grave

Requirements



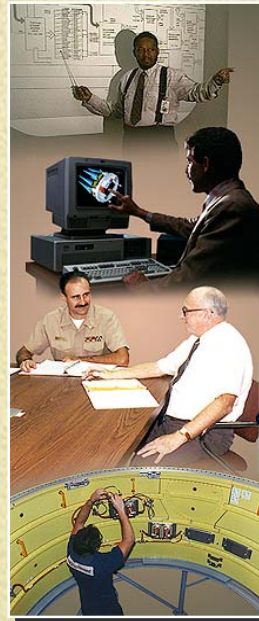
Concepts & Evolutions



Development



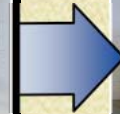
Production



Assembly Facilities



Op Support



Retirement

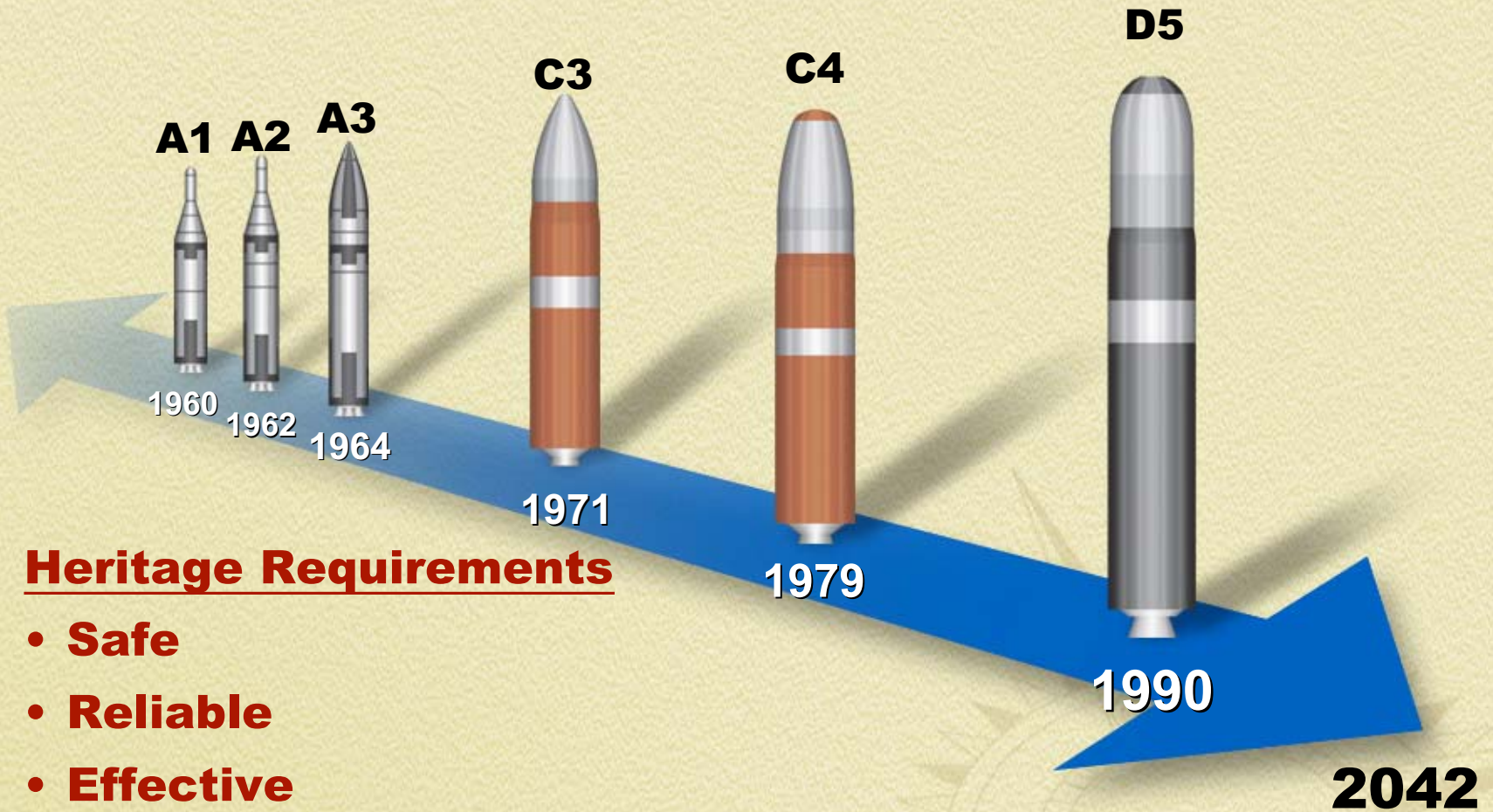


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**We have the ability to affect change across all phases of The D5 product life cycle**



# ***Innovative Sea-Based Weapon Systems Evolution*** ***The Premier Offensive System***



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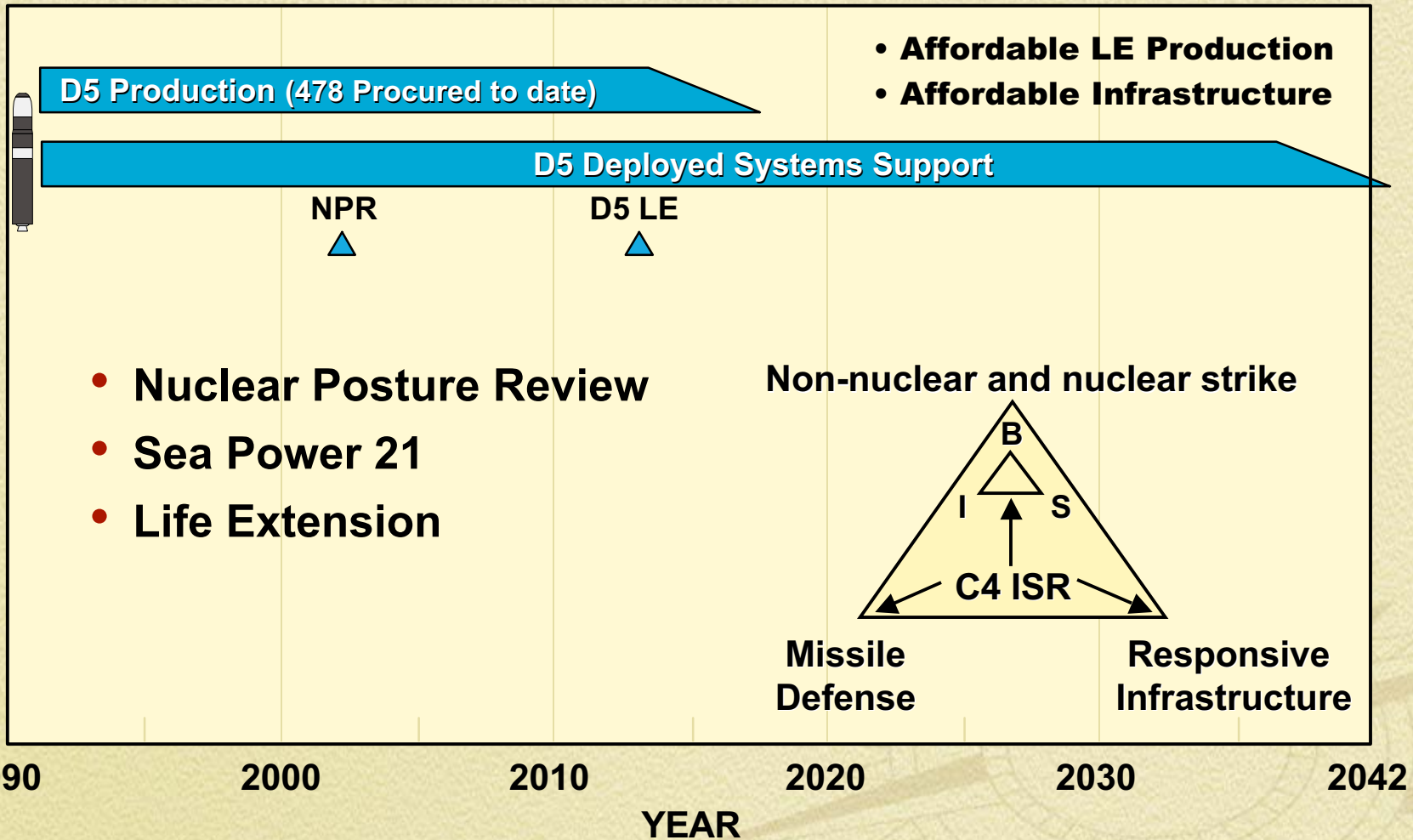
## **Heritage Requirements**

- **Safe**
- **Reliable**
- **Effective**
- **Survivable**
- **C**

**The new mandate includes “Affordable”**



# FBM Affordability Challenges

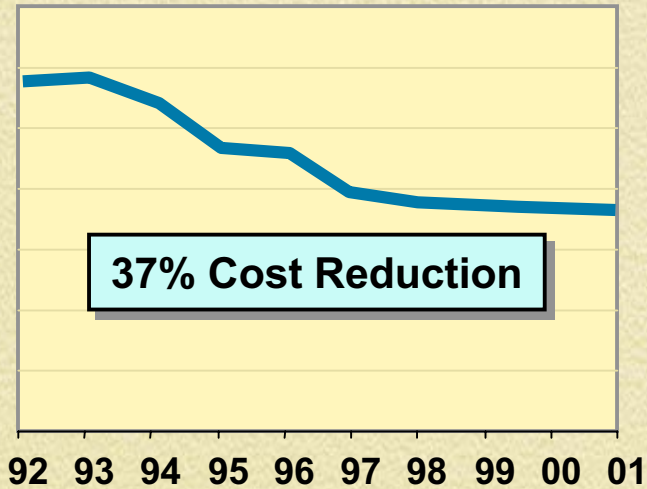




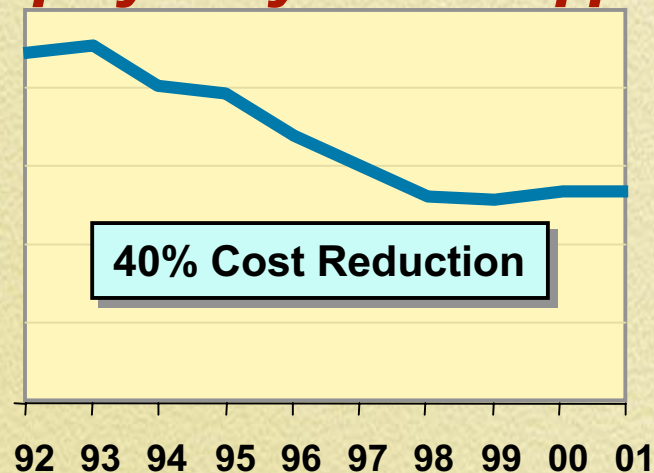
# FBM Affordability Success



## Production



## Deployed Systems Support



- 106 of 106 Successful Flights to date
- Achieved all Fleet Out-Load Schedule Requirements
- Maintained Unit Production Cost



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## ***Affordability Examples***

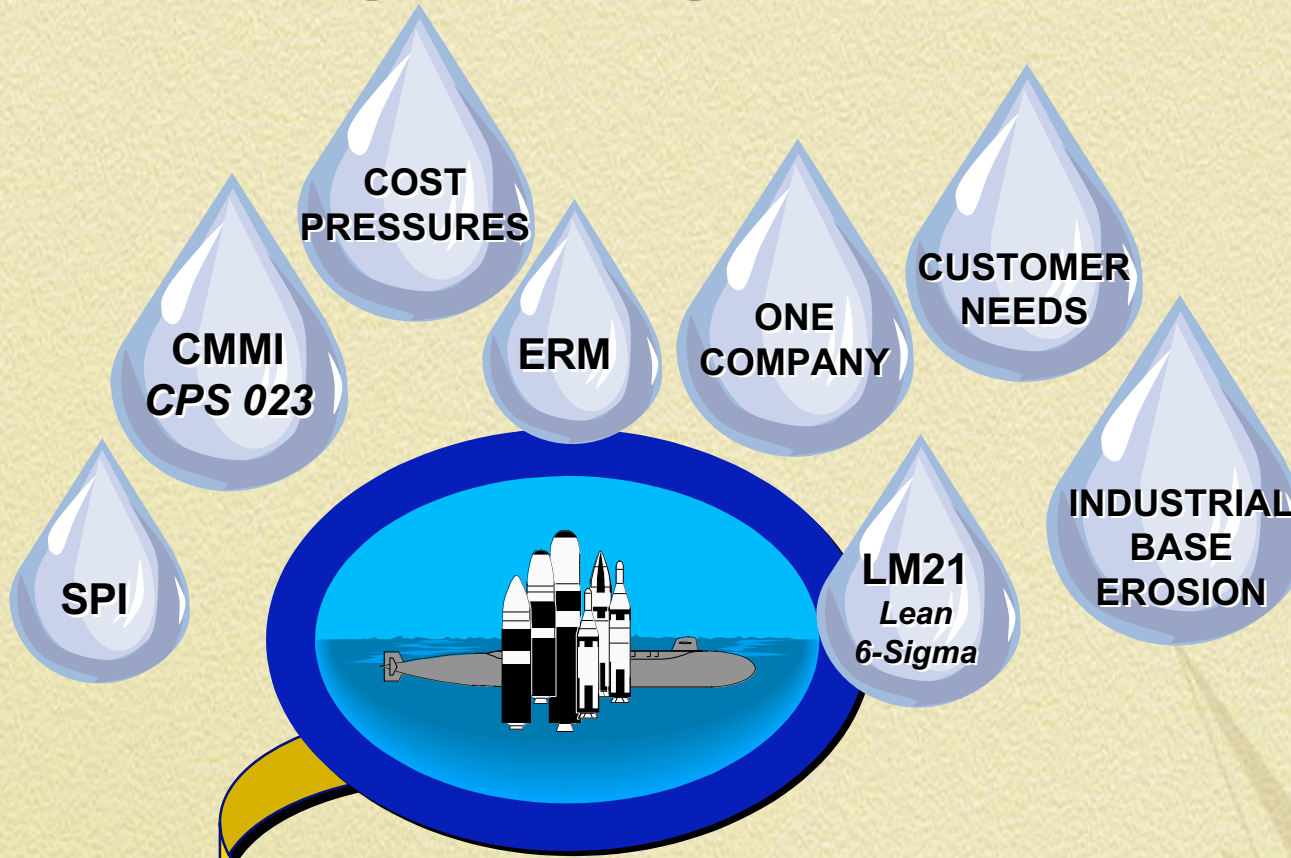


- **Manufacturing Self-Inspection**
- **Propulsion Production Consolidation**
- **Establish Factory Management Teams**
- **Organization Breakdown Structure**
- **Support Equipment Design and Checkout Areas**
- **Machining Outsourcing Initiative**
- **Machine Shop Consolidation**
- **Processes Relocated to SWFLANT**
- **Cable Shop and Final Assembly for Equipment Section and Interstage**
- **Proposal**
- **Tests: Motors, Gas Generators**
- **Manufacturing Inspection Points**
- **Established Cross functional teams (IPT's) & Process Control Utilizing Six Sigma Techniques**



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# Raining Change




- Meet Core Mission
- Institutionalize CI



**Create  
FIT**

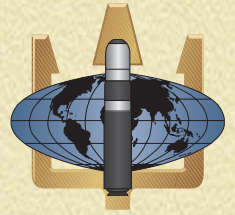
- Implement CI**
- Deming
  - Juran
  - LM21

**The Need For a Driving Force Was Evident!**



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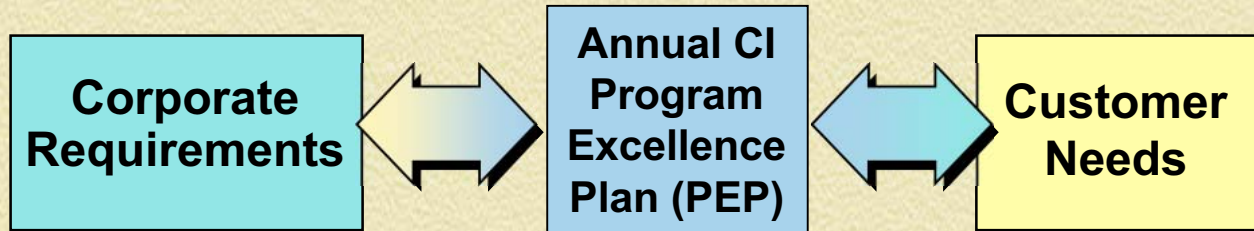
# ***The FBM Improvement Team (FIT)***



- **People**
  - Highly skilled and competent
  - Report directly to SMP Vice President
  - Funded by “tax” to the SMP Sr. Manager’s
- **Processes**
  - Authorized to Reconstruct the way we organize work
  - Hold Sr. Managers accountable for meeting change targets
  - Respond to Corporate change initiatives
  - Coach Sr. Managers
- **Tools**
  - Information Technology
  - Leverage Enterprise Lean, 6 Sigma Tools

**Lightning Rod For Change**

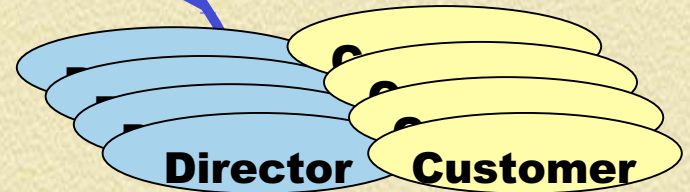
# Institutionalize CI



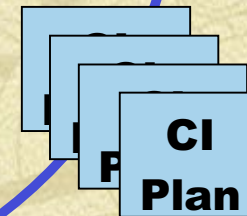
## Reporting

Major Drivers	Strategy
<ul style="list-style-type: none"> <li>Affordability                             <ul style="list-style-type: none"> <li>LE, LCTMK, DSS</li> </ul> </li> <li>Customer Satisfaction</li> <li>Cost Efficiency</li> <li>Documentation</li> </ul>	<ul style="list-style-type: none"> <li>Technology Applications</li> <li>Maximize the use of Corp &amp; local SME's</li> <li>FBM VSM's</li> </ul>
	G or B Belts Trained vs. Certified (Goal = 100% Certified) G 64/T & 41C    B = 8T & 7C    Identified for Training ~30
CI Activity (Past&Next Month)	Savings Plan
<ul style="list-style-type: none"> <li>Projects booked in October = 12 (Johnson 7, Dutra 2, Lyon 2, Dow 1)</li> <li>Dollars Booked</li> <li>Volume of non-review mirror projects</li> <li>No projects were booked in Nov.</li> </ul>	

Monthly Cycle



- **Mgmt. Oversight**
- **Metrics**
- **Document Savings**

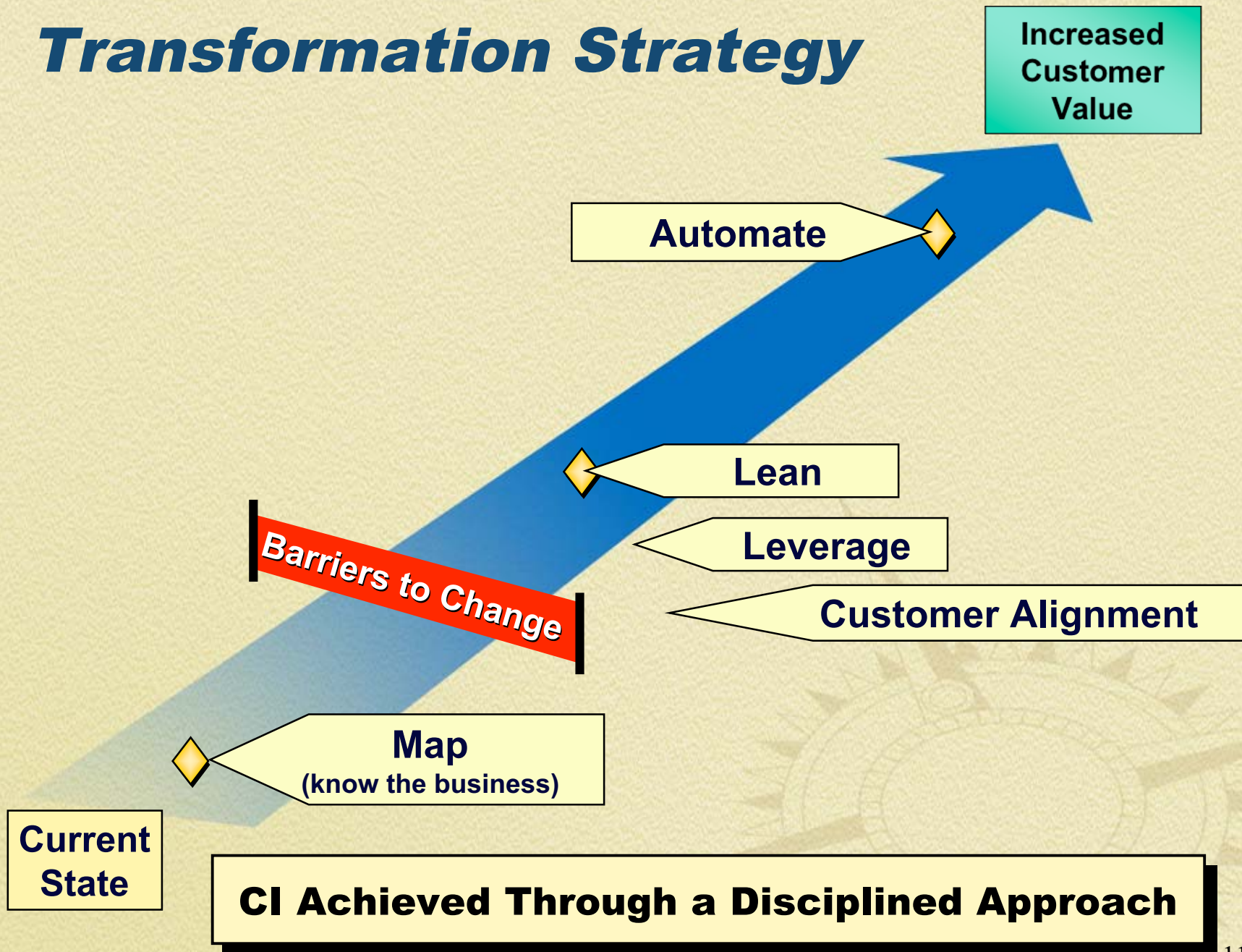


Execute CI Projects

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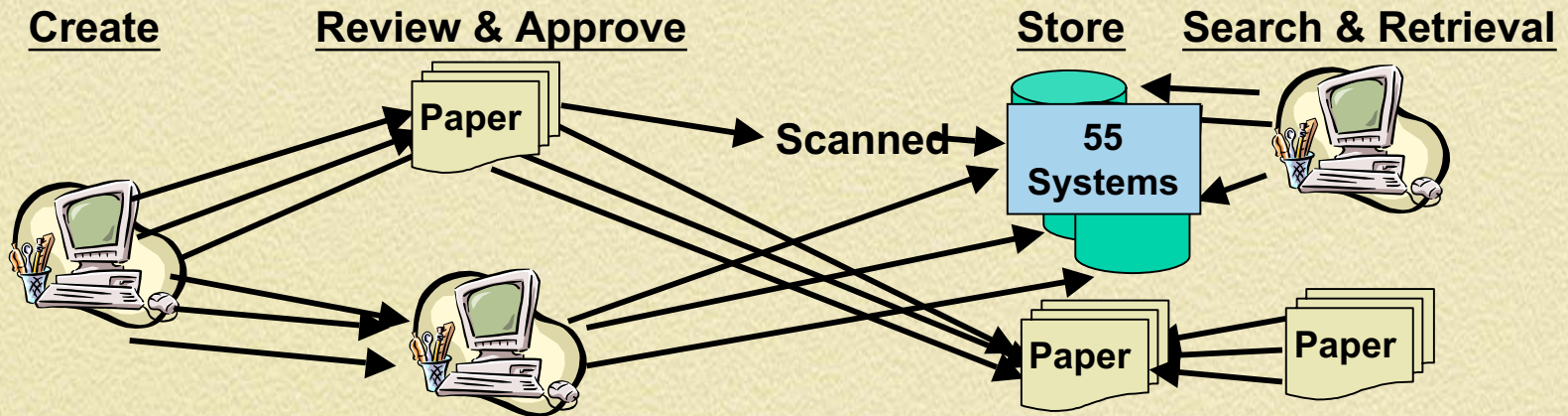
# ***FBM Five-Point Transformation Strategy***



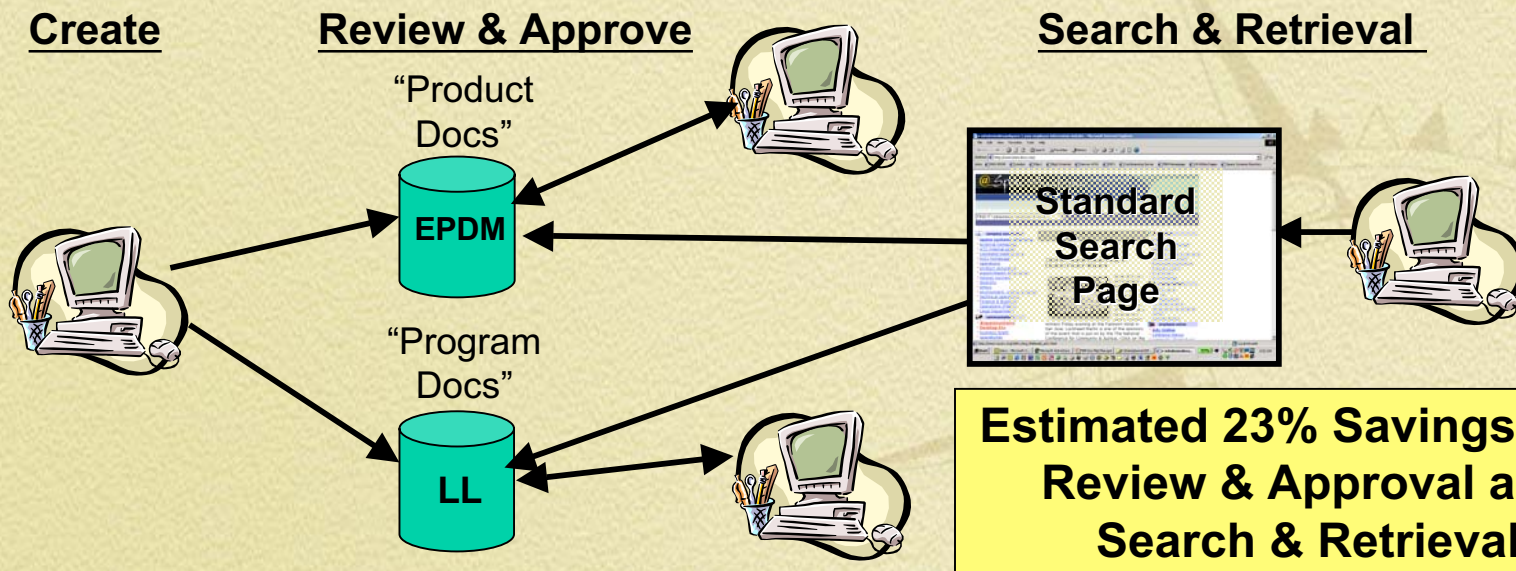


# Example: Doc Mgt. VSM

Current State: 1200 Documents



Future State: 1200 Documents



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## ***Keys to Success / Lessons Learned***

- **Partnership**
- **Top Down Leadership**
- **Empowered Focus Team**
- **Leveraging Corp & Industry Resources**

**Persistence !**