

What Will It Take to Get Better Program Outcomes?

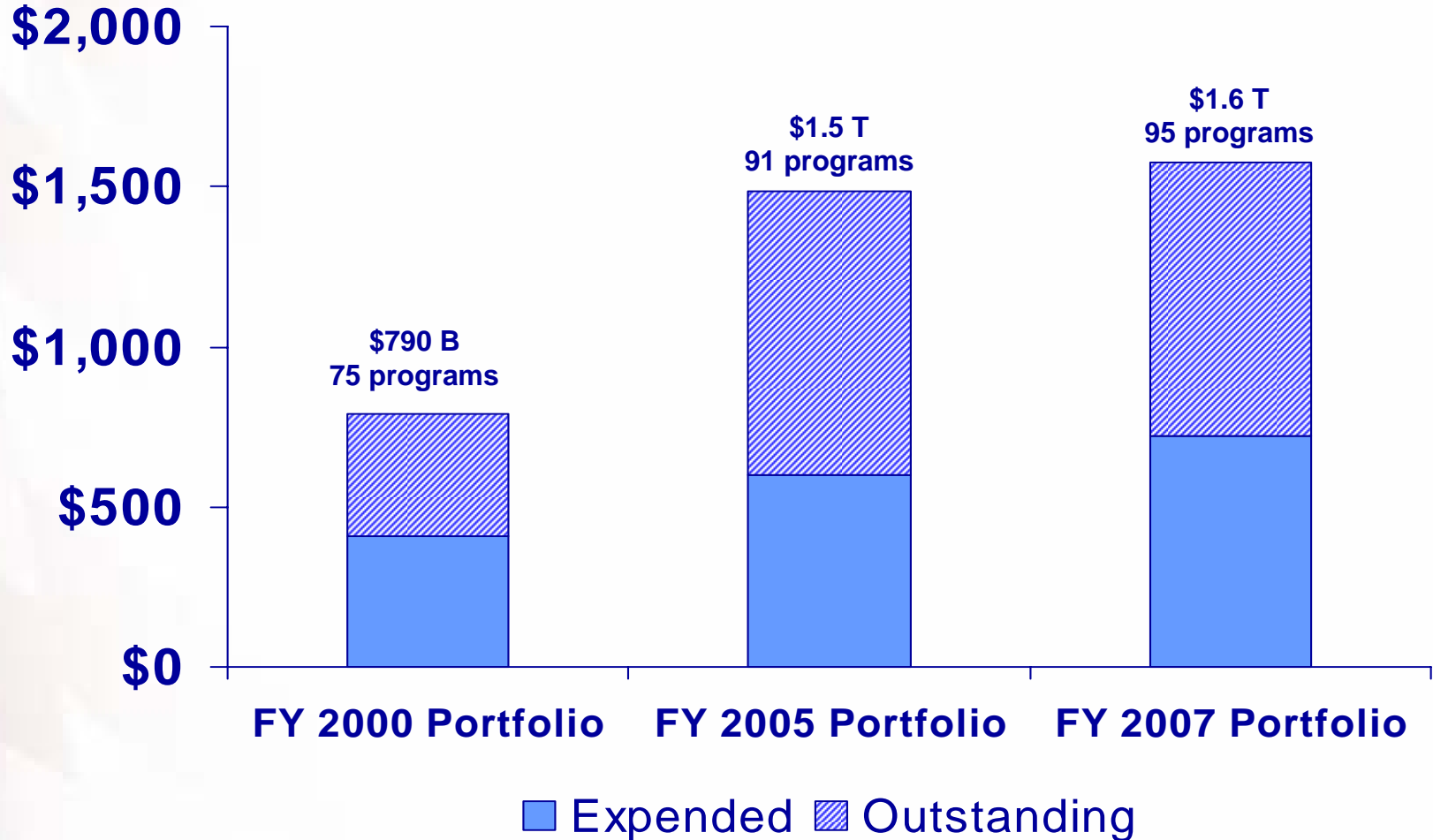
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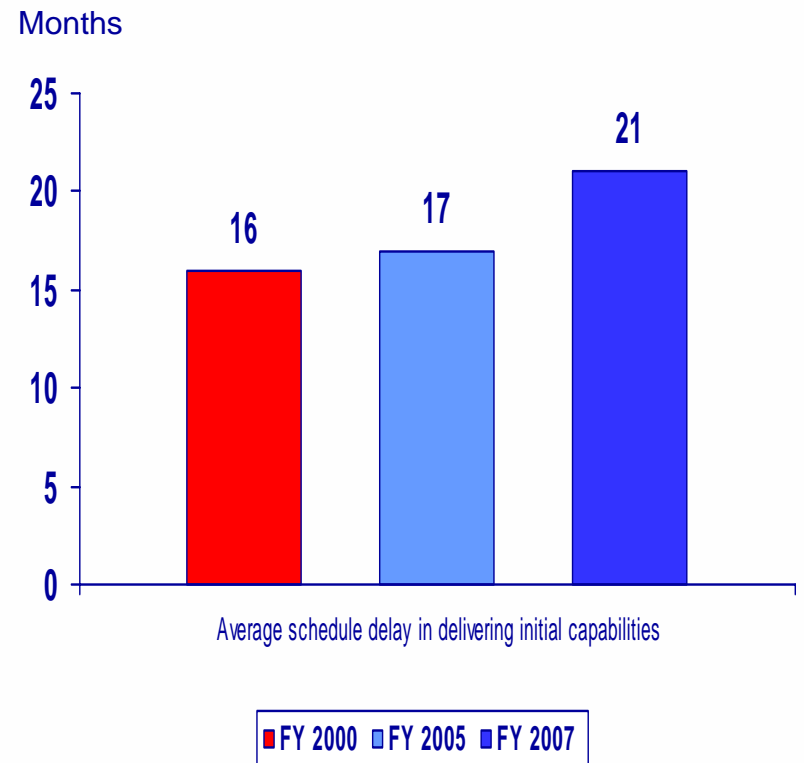
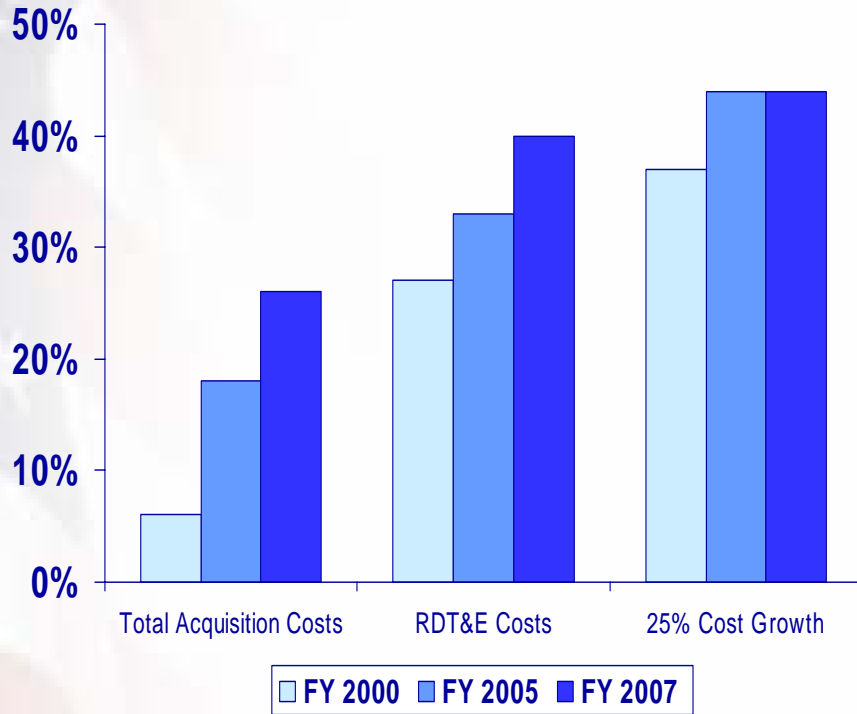
Weapon System Investment Levels

FY 2008 Dollars in Billions



Source: GAO analysis of DOD data.

Decline in Cost and Schedule Outcomes



Source: GAO analysis of DOD data.

Cost and Schedule Overruns in Five Programs

	Total Cost (billions of \$)		Total Quantities		Increase in Unit Cost	Initial Delivery of Capability	
	Planned	Latest	Planned	Latest		Planned	Latest
JSF	203.0	240.0	2,866	2,458	38%	2010	2012
FCS	88.3	128.5	15	15	46%	2010	2015
SBIRS High	4.4	10.5	5	3	300%	2003	2009
EFV	8.7	13.5	1,025	593	168%	2006	2015
H-1 Upgrades	3.4	8.3	284	284	140%	2005	2008

Source: GAO analysis of DOD data

Consequences of Poor Outcomes

Cost Growth

Reduces DOD's buying power

Means less funding for other priorities

DOD must request more funding to cover cost overruns, make trade-offs with existing programs, delay the start of new programs, or take funds from other accounts

Schedule Delays

Critical capabilities not provided to warfighter when needed

DOD must operate costly legacy systems longer than expected, find alternatives to fill capability gaps, or go without a capability

A Knowledge-Based Approach Is Key to Good Outcomes

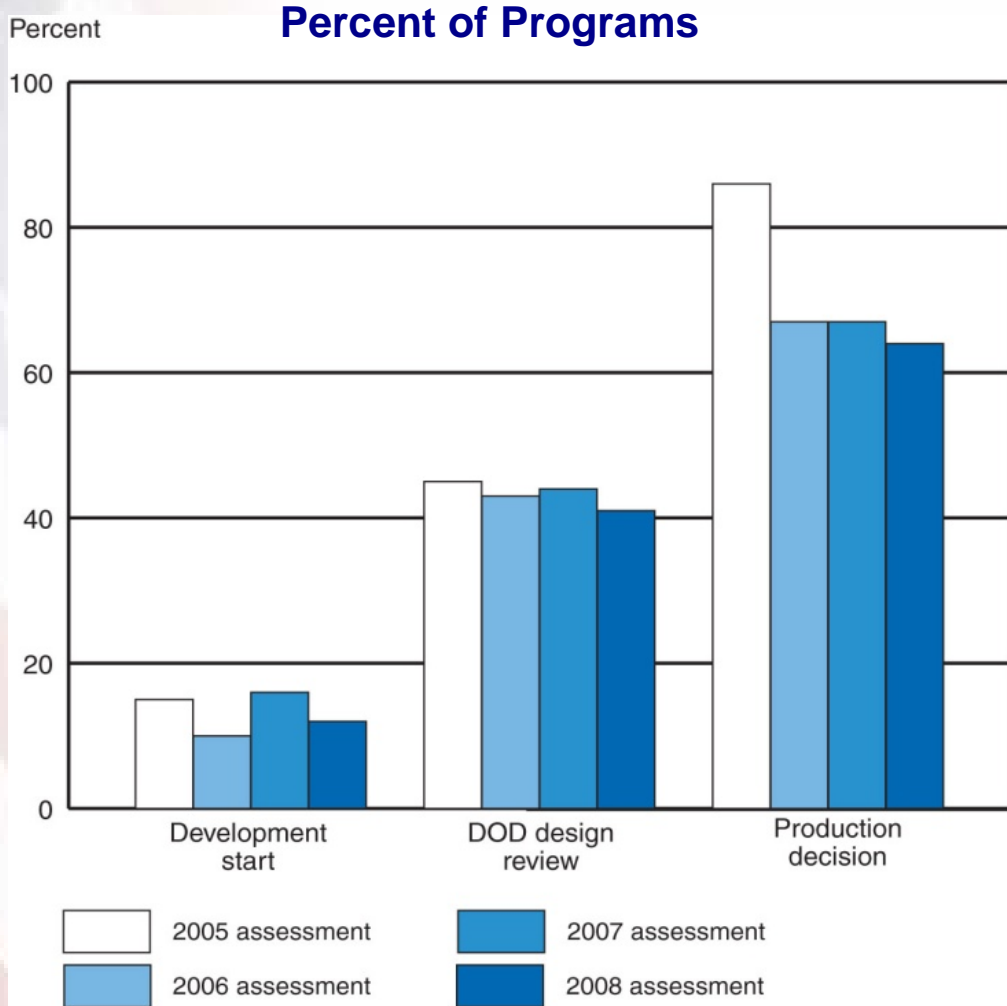


Knowledge Point 1: At milestone B, a match is achieved between the user's needs and the developer's resources. Technology maturity is demonstrated and preliminary design is achieved.

Knowledge Point 2: At critical design review, the product design demonstrates its ability to meet user needs and is stable. Prototype demonstration that design will meet requirements.

Knowledge Point 3: At milestone C, it is demonstrated that the product can be produced within cost, schedule, and quality targets. Full-up, integrated product tested in relevant environment.

Immature Technologies Ripple Through the Development Cycle

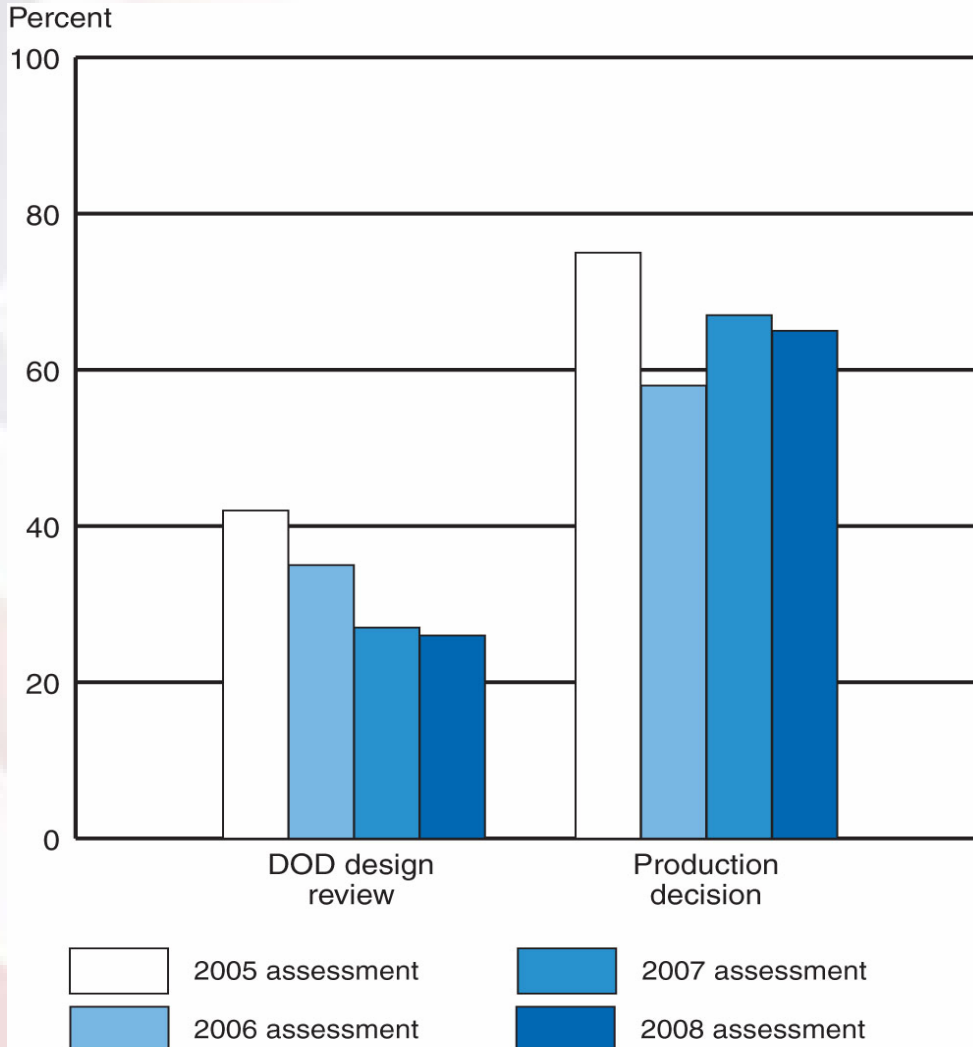


- Less than 20% of programs have mature technologies at start
- Most programs do not have mature technologies at CDR
- Many programs still maturing technologies into production
- Cost growth for programs with immature technologies was 44% higher
- Only 10 percent of programs had completed PDR at start

Source: GAO analysis of DOD data.

Programs Proceed Through CDR without Design Stability

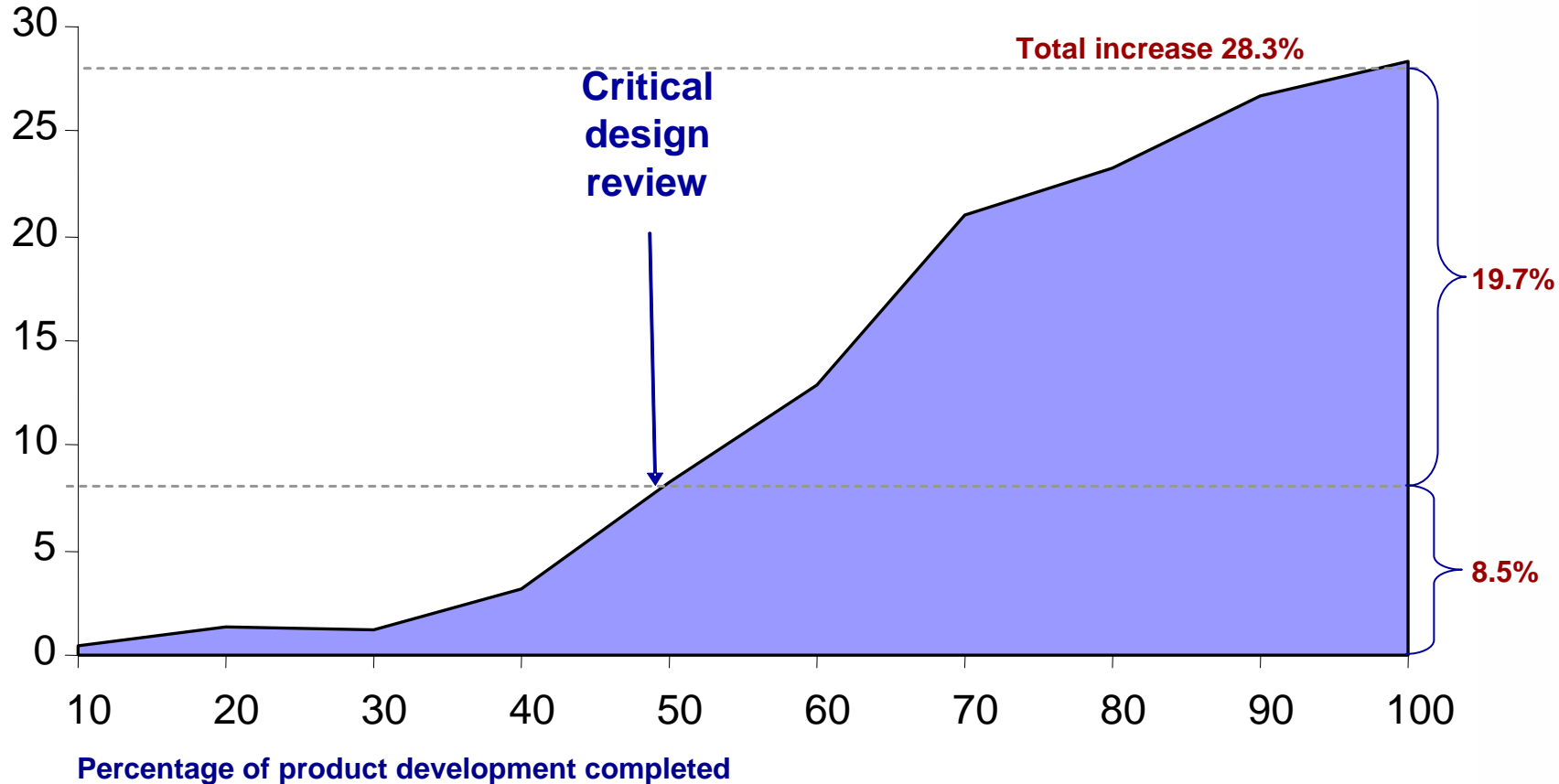
Drawing Releases



- Goal is 90% drawings releasable at CDR
- 3/4 of programs do not meet this standard at CDR
- At milestone C, over 1/3 of programs still did not meet this standard

R&D Cost Growth Experience

Percentage of RDT&E cost increase over development estimate



Other Observations on Current Practices

- Fewer than half of programs plan to test fully-integrated, production-representative prototypes before Milestone C (including JSF and FCS)
- During FY 2007, DOT&E reports that 50% of programs failed operational suitability; reliability is on a downward trend
- GAO has recently reported that during FY 2008, missile defense assets were produced and fielded before being flight tested
- Programs, like JSF, are using cost-reimbursable contracts in production.

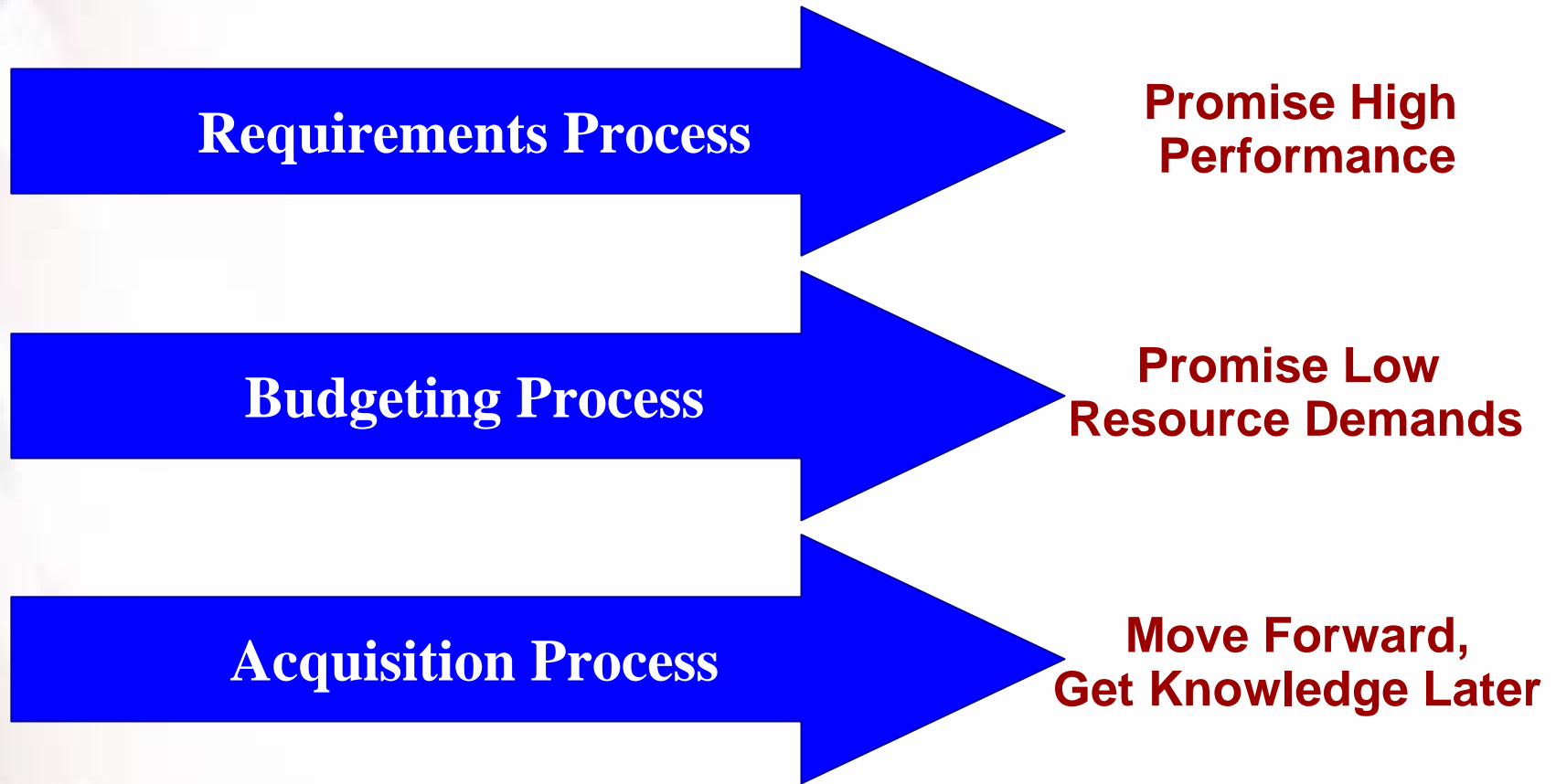
2008 DOD 5000 Policy

- Reinvigorated Milestone A and technology development phase
- Configuration Steering Boards established to control requirements creep
- Stronger emphasis on systems engineering
- Preliminary Design Review before Milestone B
- Formal post-CDR assessment
- Stronger pre-milestone C requirements (DT&E, M&S, production-representative prototypes, pilot line production)

2009 Weapon System Acquisition Reform Act (proposed)

- Identify and fill gaps in systems engineering capabilities
- Create Director of Developmental Test and Evaluation
- DDR&E review and assessment of critical technology maturities
- Create Director of Independent Cost Assessment
- Cut across requirements, budgeting, and acquisition stovepipes to make needed tradeoffs.
- PDR before Milestone B

Cause: Process Pressures



The process is not broken: it's in equilibrium
Good people are not put in a position to succeed

Prognosis for Change

- Weapon system issues have been consistent for 30 years
- They are primarily **not** due to mistakes, lack of expertise, or unforeseeable events
- Consider the process as being in equilibrium versus broken:
 - The acquisition process may be producing what the participants collectively want or are willing to settle for.
 - It is a rational process that involves good people. It works—this is how programs get money and survive.
- Our principles are revealed by what we do and what we do with money; if unexecutable programs continue to win funds, then our principles remain something other than what is stated in policy.
- Process reforms, funding cuts, and cancellations aren't enough to change the culture or equilibrium: programs with executable strategies (technology, design, test, & cost) must win the budget battles.
- For this to happen, we need a significant emotional event; I hope that a new administration and new opportunities may constitute that event.