GAO

Importance of Establishing a Sound, Executable Business Case

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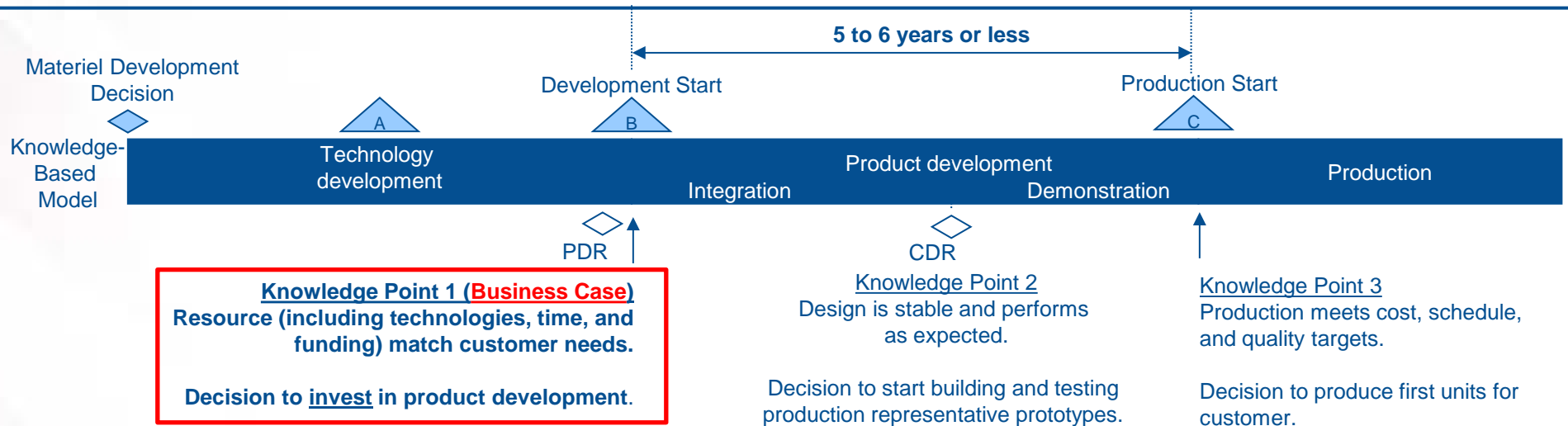**Acquisition and Sourcing Management Team**

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Elements of a Sound, Executable Business Case

- A requirement exists that warrants a materiel solution consistent with national military strategy priorities.

- The materiel developer has the resources—including the requisite mature technologies and technical knowledge—necessary to meet the requirement.

- The materiel developer has a knowledge-based product development plan that will attain high levels of design and production maturity at the right times.

- Reasonable estimates have been developed to execute the product development and production plan

- Funding is available to fully resource the product development and production plan.
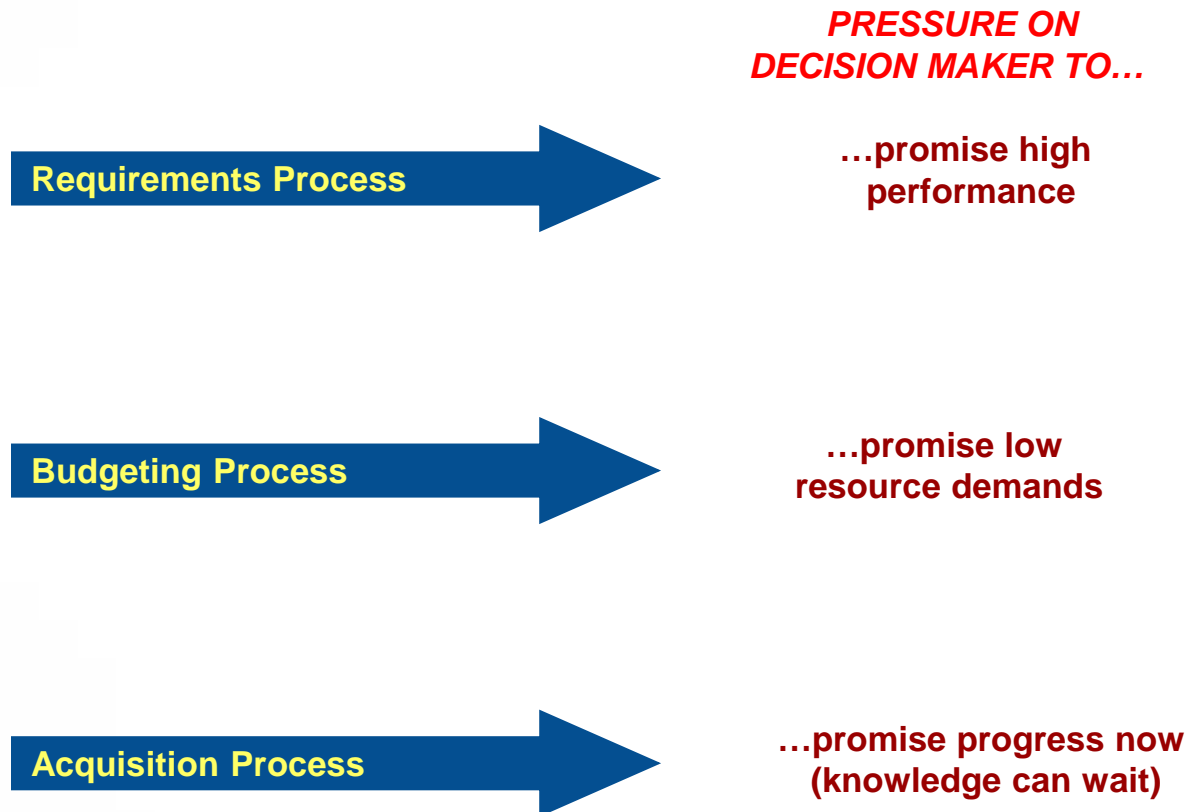
Business Case is Key to a Knowledge-Based Acquisition Approach

5 to 6 years or less

Materiel Development Decision

Development Start

Production Start

Knowledge-Based Model

A

B

C

Technology development

Product development

Production

Integration

Demonstration

PDR

CDR

Knowledge Point 1 (Business Case)
Resource (including technologies, time, and funding) match customer needs.

Decision to invest in product development.

Knowledge Point 2
Design is stable and performs as expected.

Decision to start building and testing production representative prototypes.

Knowledge Point 3
Production meets cost, schedule, and quality targets.

Decision to produce first units for customer.

- Model provides framework for incremental, time certain (development constrained to 5 to 6 years or less), and knowledge-based approach to weapon system acquisitions.

- Success requires structured, disciplined application and adherence to model.

- Knowledge points align with key investment inflection points.

- Controls are in place for decisions makers to measure progress against specific criteria and ensure managers capture key knowledge before moving to next phase.

Underlying Challenge #1: Process Structure

DOD's Three Key Decision Making Processes are Not Fully Integrated

PRESSURE ON
DECISION MAKER TO…

Requirements Process ➔ **…promise high performance**

Budgeting Process ➔ **…promise low resource demands**

Acquisition Process ➔ **…promise progress now (knowledge can wait)**

Underlying Challenge #2: Requirements Knowledge

- Operational performance requirements (e.g. KPPs) often not fully developed or well defined when validated by the JROC and passed over to the acquisition process at Milestone B.

- During system development, top-level requirements translated into technical weapon system level requirements (specifications).

- When technical specifications are finally understood and design challenges recognized, cost and schedule increases come to light.

- What appears to be requirements creep is often recognition that weapon system will require more time and money to build to technical specifications and meet originally agreed upon KPPs.

F-35: Story of an Un-executable Business Case

	October 2001 Initial Baseline	March 2012 Latest Baseline	December 2014 Estimates	Change from 2001 to 2012	Change from 2012 to 2014
Expected quantities (number of aircraft)					
Developmental quantities	14	14	14	0%	0%
Procurement quantities (U.S. only)	2,852	2,443	2,443	-14	0
Total quantities	2,866	2,457	2,457	-14	0
Cost estimates (then-year dollars in billions)					
Development	$34.4	$55.2	$54.9	60%	-0.5%
Procurement	196.6	335.7	331.6	71	-1.2
Military construction	2.0	4.8	4.6	140	-4.2
Total program acquisition	233.0	395.7	391.1	70	-1.2
Unit cost estimates (then-year dollars in millions)					
Program acquisition	$81	$161	$159	99%	-1.2%
Average procurement	69	137	136	99	-0.7
Estimated delivery and production dates					
Initial operational capability	2010-2012	Undetermined	2015-2018	5-6 years	
Full-rate production	2012	2019	2019	7 years	0 years

UCLASS: Story of a Business Case in Development

- UCLASS proposed acquisition strategy reflected aspects of a knowledge-based approach (e.g. early preliminary design work).

- However, formal business case and program baseline not planned until after commitment to development and early production.
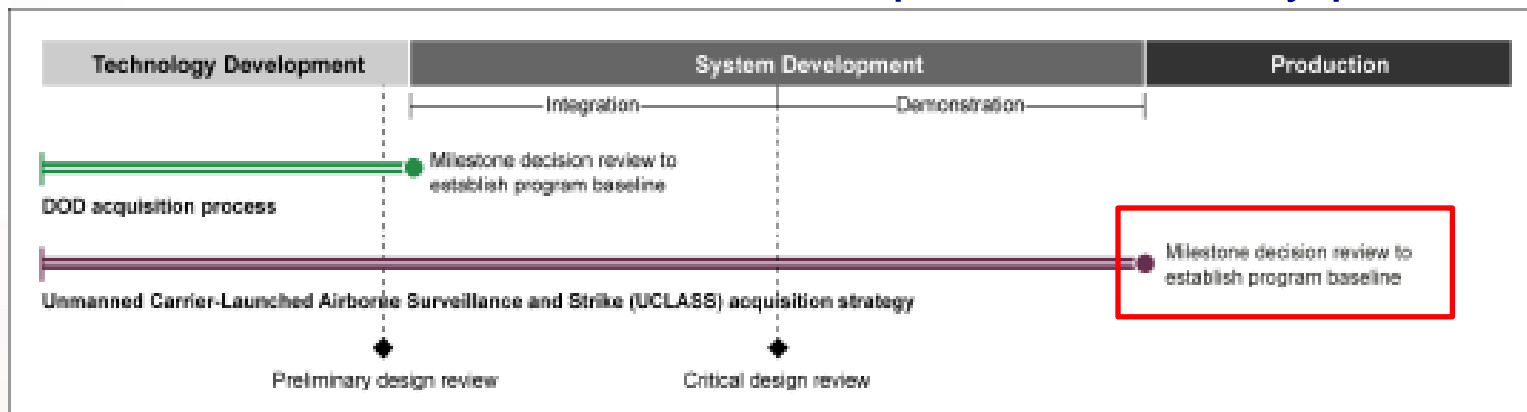
Source: GAO analysis of DOD data.

- Recent questions about requirements have delayed the program.
  - Allowing time to settle requirements and develop a sound business case.
  - Now is the time to have this debate, not after committing to a program.

Steps to Improving Business Cases and Acquisition Outcomes

#1 Fragmented Processes

- Establishing <u>sound</u> business case as a basis for program launch (requirements, funding, and acquisition – agreements)

- Aligning funding decisions to occur after milestone decisions

- Decision-makers saying "no" to programs that are not sound

- Accountability for program outcomes – ensure workforce skilled, equipped, and remain in place to key junctures

#2 Lack of Requirements Knowledge

- Use of systems engineering principles to inform requirements early

- Increased investment in early risk reduction and prototyping activities (pre-EMD) for technology maturity and preliminary designs

- Time constrained, evolutionary, and knowledge-based development plans

- Robust, responsive S&T capability for cultivating technologies (relevant / timely)

- Program risk levels that would enable more fixed type development contracts