
reviews before development start; (2) demonstrate capabilities using competitive prototypes; (3) ensure that appropriate trade-offs among cost, schedule, and performance objectives are considered before development start; and (4) include measures to ensure competition or the option of competition throughout the programs' life cycle in their acquisition strategies. We also assessed a new requirement from the 2008 revision to DOD Instruction 5000.02 for a materiel development decision prior to a program's entry into the acquisition process and two initiatives from DOD's September 2010 better buying power memorandum focusing on affordability and "should cost" targets. Many of these reforms and others depend on increased investments of time and resources at the beginning of the acquisition process and encourage an awareness of cost performance throughout a program's life cycle. Increased funding of technology development can have beneficial effects for acquisition programs if the funds are spent on activities appropriate for that phase, such as prototype demonstrations and systems engineering analysis.

Our analysis of 16 future and 37 current major defense acquisition programs allows us to make three observations concerning DOD's progress in implementing these reforms.

Acquisition Reform Observations

1. Almost all of the future major defense acquisition programs we assessed have implemented or plan to implement acquisition reforms from the Weapon Systems Acquisition Reform Act of 2009; current programs have a mixed record in regards to implementing certification requirements from the act, such as considering appropriate trade-offs among cost, schedule, and performance objectives.
2. Some future programs have not implemented the new DOD policy requirement to hold a materiel development decision, and many future and current programs are still working to implement new initiatives, such as developing affordability targets and conducting "should cost" analysis.
3. The 16 future major defense acquisition programs we assessed are investing more funds before entering system development or production than current major defense acquisition programs, which should reduce their technical risk.

Additional information about these observations follows.

- **Almost all future programs have implemented, or plan to implement, most of the legislative reforms we examined. Current programs have waived several of the newest certification requirements.** The Weapon Systems Acquisition Reform Act of 2009

introduced a requirement for a preliminary design review to be held for all major defense acquisition programs before the start of system development.²⁰ Eleven of the 16 future major defense acquisition programs in our assessment intend to conduct such a review in accordance with the act. Four of the remaining programs have not yet established a date for their preliminary design reviews; the fifth program is not required to hold a preliminary design review because it expects to enter the acquisition cycle at production start.

The Weapon Systems Acquisition Reform Act of 2009 also requires the acquisition strategy for major defense acquisition programs to provide for use of competitive prototypes before a program enters system development, which can provide a program with an opportunity to reduce technical risk, refine requirements, validate designs and cost estimates, and evaluate manufacturing processes. According to the results of our survey, 13 of the 16 future programs in our assessment intend to develop prototypes of the proposed weapon system or key subsystems before development start. Three programs do not intend to use prototyping and two of those programs intend to seek a waiver from the prototyping requirement, as provided by the act. The program that does not intend to seek the waiver—the Common Vertical Lift Support Platform—is proceeding directly to production and the competitive prototyping requirement is not applicable.

A requirement for major defense acquisition programs to have acquisition strategies that ensure competition or the option of competition throughout the acquisition life cycle was also included in the Weapon Systems Acquisition Reform Act of 2009.²¹ Use of competition throughout a program's life cycle can help to reduce program costs. Measures to ensure competition or the option of competition may include developing competitive prototypes, using modular open architectures to enable competition for upgrades, and holding periodic system or program reviews to address long-term competitive effects of program decisions. Eleven of the 16 future programs in our assessment intend to use these measures or options after development start. Figure 9 summarizes the progress in implementing selected acquisition reforms for future programs.

²⁰Pub. L. No. 111-23, § 205(a).

²¹Pub. L. No. 111-23, § 202.

Figure 9: Progress in Implementing Selected Reforms in Future Major Defense Acquisition Programs

System	Hold preliminary design review	Competitive prototyping	Competitive acquisition strategy
Three Dimensional Expeditionary Long Range Radar	●	●	●
Air and Missile Defense Radar	●	●	●
B-2 Defensive Management System Modernization	TBD	●	○
B-2 Extremely High Frequency SATCOM Capability Increment 2	TBD	●	○
Combat Rescue Helicopter	TBD	○	●
Common Vertical Lift Support Platform			●
Enhanced Polar System	●	○	○
Ground Combat Vehicle	TBD	●	●
Global Positioning System OCX Ground Control Segment	●	●	○
Joint Air-to-Ground Missile	●	●	○
Joint Light Tactical Vehicle	●	●	●
Littoral Combat Ship Mission Modules	●	●	●
Nett Warrior	●	●	●
Ohio-class Replacement	●	●	●
Space Fence	●	●	●
Ship to Shore Connector	●	●	●

- Practice implemented by program
- Practice not implemented by program
- TBD To be determined
- Practice not applicable or information not available

Source: GAO analysis of survey data.

The Weapon Systems Acquisition Reform Act of 2009 also required, as part of a mandatory program certification prior to development start, an analysis that appropriate trade-offs among cost, schedule, and performance objectives have been made to ensure the program is affordable.²² The mandatory certification also requires that, before development start, a major defense acquisition program hold a

²²Pub. L. No. 111-23, § 201(f).