



Highlights of [GAO-03-645T](#), a testimony before the Subcommittee on National Security, Emerging Threats, and International Relations, Government Reform Committee, House of Representatives

Why GAO Did This Study

Over the next 5 years, DOD's overall investments are expected to average \$150 billion a year to modernize and transition our forces. In addition, DOD must modernize its forces amid competing demands for federal funds, such as health care and homeland security. Therefore, it is critical that DOD manage its acquisitions in the most cost efficient and effective manner possible.

DOD's newest acquisition policy emphasizes the use of evolutionary, knowledge-based concepts that have proven to produce more effective and efficient weapon systems outcomes. However, most DOD programs currently do not employ these practices and, as a result, experience cost increases, schedule delays, and poor product quality and reliability.

This testimony compares the best practices for developing new products with the experiences of the F/A-22 program.

What GAO Recommends

GAO is not making recommendations in this testimony. However, in a number of prior reports, GAO has recommended that DOD adopt policies with metrics for technology, design, and manufacturing maturity to support knowledge-based decision making. These policies should apply when making decisions on individual weapons programs.

www.gao.gov/cgi-bin/getrpt?GAO-03-645T.

To view the full report, including the scope and methodology, click on the link above. For more information, contact Katherine Schinasi at (202) 512-4841 or schinasi@gao.gov.

BEST PRACTICES

Better Acquisition Outcomes Are Possible If DOD Can Apply Lessons From F/A-22 Program

What GAO Found

GAO's reviews of commercial best practices have identified key enablers to the success of product development programs and focused on how DOD can better leverage its investments by shortening the time it takes to field new capabilities at a more predictable cost and schedule. First, commercial firms use an approach that evolves a product to its ultimate capabilities on the basis of mature technologies and available resources. This approach allows only the product features and capabilities achievable with available resources in the initial development. Further product enhancements are planned for subsequent development efforts when technologies are proven to be mature and other resources are available. Second, commercial firms ensure that a high level of knowledge exists at key junctures during a product's development. The knowledge-based process includes three points:

- Before a program is launched, successful programs match customer needs and available resources—technology, engineering knowledge, time, and funding.
- About midway through development, the ability of the product's design is demonstrated to be stable and meet performance requirements.
- Before production begins, programs must show that a product can be manufactured within cost, schedule, and quality targets.

In contrast, the F/A-22 program illustrates what can happen when a major acquisition program is not guided by the principles of evolutionary, knowledge-based acquisition. When the program was started, several key technologies were not mature. Program managers proceeded through development without the requisite knowledge to effectively manage program risk and, at the start of production, key manufacturing processes were not under control. The F/A-22 program has undergone significant cost increases. Instead of fielding early capabilities to the war fighter, the development cycle has extended to 19 years, so far, and original quantities have been significantly reduced, raising concerns about the capability the program will eventually deliver.

DOD recognizes the need to get better weapon system outcomes, and its newest acquisition policy emphasizes the use of evolutionary, knowledge-based acquisition concepts proven to produce better outcomes in developing new products. However, policy changes alone are not enough. Leadership commitment and attention to putting the policy into practice for individual programs is needed to avoid the problems of the past. DOD will have many opportunities to do so over the next several years with its force modernization investments.