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Is Weapon System Cost Growth Getting Better or Worse?

Cost growth in U.S. Department of Defense (DoD) acquisition programs has been a long-standing concern of senior policymakers and members of Congress. A 2006 RAND Project AIR FORCE (PAF) study of completed weapon system programs from the past 30 years showed that costs grew by an average of 46 percent over what was estimated at milestone B (the approval for development).¹

Building on this previous work, the Air Force asked PAF to further examine the cost of completed and ongoing programs to determine whether there have been any trends in cost growth. Researchers analyzed Selected Acquisition Reports (SARs) data for major defense acquisition programs since the 1970s, focusing on the development phase because it is a good indicator of total program cost growth.²

Cost Growth Has Remained High, with No Discernable Time Trend

The analysis of development cost data for completed and ongoing major weapon system programs, measured at five years past milestone B, shows that there is no significant difference in development cost growth from one decade to the next. This is true whether one adjusts for the differences in the mix of systems developed in each decade (e.g., aircraft, missiles, space systems, electronics), weights by the dollars invested in development, or compares cost growth between the military services. Thus, despite the many acquisition reforms and other DoD management initiatives over the years, the development cost growth of military systems has not been reduced.

DoD Can and Should Do Better at Controlling Cost Growth

Recent PAF research shows that many factors contribute to cost growth, including overoptimism, estimating errors, unrecognized technical issues, requirements creep, lack of incentives to control cost, and schedule extensions. Therefore, addressing the issue of cost growth requires vigorous involvement by all stakeholders in DoD. For example, efforts to control cost growth should involve not only those who manage the acquisition process, but also the warfighters who set requirements. Relying on proven technologies and keeping requirements stable may help to prevent development costs from rising.

DoD Should Pay Special Attention to the Cost Estimates on Which Budgets Are Based

Cost growth may reflect poor initial budget estimates. The ever-increasing complexity of weapon systems poses a particular challenge for cost estimators. The systems developed in each successive decade are more complex than those of the prior decade. Furthermore, there is a tendency to be overly optimistic at the beginning of a program as to how difficult such activities may be. Better and more realistic cost estimates would not necessarily save any money, but they would provide decisionmakers with a better basis for deciding whether to pursue a given program. ■

¹ Mark V. Arena, Robert S. Leonard, Sheila E. Murray, and Obaid Younossi, *Historical Cost Growth of Completed Weapon System Programs*, Santa Monica, Calif.: RAND Corporation, TR-343-AF, 2006.

² The data collection and analysis in this study were completed in the fall of 2005 and therefore include data up to the 2004 SARs. Further, researchers included only ongoing programs that had matured five years past their respective milestone Bs. Thus, this analysis excludes ongoing programs, such as Joint Strike Fighter (JSF), Global Hawk, the advanced extremely high-frequency (AEHF) satellite, the wideband gapfiller satellite (WGS), the National Polar-Orbiting Operational Environmental Satellite System (NPOESS), the C-130 avionics modernization program, and the C-5 reliability enhancement and reengineering program.



This research brief describes work done for RAND Project AIR FORCE and documented in *Is Weapon System Cost Growth Increasing?* by Obaid Younossi, Mark V. Arena, Robert S. Leonard, Charles Robert Roll, Jr., Arvind Jain, and Jerry M. Sollinger, MG-588-AF (available at <http://www.rand.org/pubs/monographs/MG588/>), 2007, 126 pp., ISBN: 978-0-8330-4135-7. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.

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