ELSEVIER

Review of Financial Economics 17 (2008) 33–45

RFE
Review of Financial Economics

www.elsevier.com/locate/econbase

A market reaction to DOD contract delay — Does the market reward poor performance?☆

Robert Carden, Sonia E. Leach, Jeffrey S. Smith *

Department of Systems Engineering and Management, Air Force Institute of Technology, United States

Received 15 May 2006; accepted 1 February 2007
Available online 20 February 2007

Abstract

Civilian development projects occur faster than projects for the Department of Defense (DoD). Faster development either means quicker delivery (i.e. sales), or for DoD, it means a more capable warfighter. On average, DoD Acquisition Category One (ACAT I) development projects now take 15 years, an increase of 20%. These same companies producing civilian products faster fail to do so with their DoD contracts. This paper examines the relationship between DoD delay and its impact on shareholder wealth. The results show positive, significant wealth for shareholders at the announcement of a DoD delay, suggesting an insensitivity toward such production delays.

JEL classification: G14; H57; L21
Keywords: Acquisition; DoD; Lean; Event study

1. Introduction

Over the past 40 years, there has been a steady increase in the time it takes an acquisition program to produce a weapon system for the warfighter. McNutt (1998) described the magnitude of this problem by

☆ The views expressed in this paper are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the United States Government.

* Corresponding author. Air Force Institute of Technology, Bldg. 640, Room 103b, 2950 Hobson Way, Wright-Patterson AFB OH 45433, United States. Tel.: +1 937 255 3636x7393; fax: +1 937 656 4699.
E-mail address: jeffrey.smith@afit.edu (J.S. Smith).

1058-3300/$ - see front matter © 2007 Published by Elsevier Inc.
doi:10.1016/j.rfe.2007.02.004

Table 1
Growth of the 26 continuous programs in the GAO (2005) study

	2003	2005	% change
Total cost	$479.6	$548.9	14
RDT and E cost	$102.0	$144.7	42
Acquisition cycle time	146.6 months	175.3 months	20

considering the history of acquisition cycle time of Acquisition Category I (ACAT I)[1] programs. In 1965, the average ACAT I program took 60 months; by 1994, the average ACAT I program had extended to over 108 months (McNutt, 1998). In 1986, the Packard Commission warned that unreasonably long acquisition cycle times (e.g. 10 to 15 years) will have a negative impact on national security. Notwithstanding the Packard Commission's warning, a 1993 RAND study found that the trend of growth in acquisition cycle time had not diminished (Drezner, Jarvaise, Hess, Hough, & Norton, 1993).

The most up-to-date reviews of large weapon system acquisitions are accomplished annually by the Government Accountability Office (GAO, 2003, 2004, 2005). The GAO defines acquisition cycle time from the point of approval to initial operating capability (IOC). Delay is defined as an extension to the originally predicted cycle time. For standardization, these definitions have been adopted for this research. In 2005, the GAO found that over the last 3 years, programs had increased their cycle time from 147 to 175 months, a 19% increase. Table 1 summarizes the cost and schedule growth of programs reviewed by GAO in their 2005 report. Fig. 1 shows that McNutt's predicted growth in cycle times for 2000–2004 falls well short of the actual GAO data reported in 2005, a worrisome trend.

Somewhat ironically, the companies identified as having the largest cycle time growth (delay) on DoD contracts have also been lauded for their ability to develop and deliver products to their commercial customers faster, better and cheaper. Boeing, Pratt and Whitney (P and W) and Northrop Grumman have all been cited as industry examples for cycle time improvement. These same companies' performances on DoD contracts executed concurrently to their noteworthy commercial efforts, however, have not been as outstanding. For example, Boeing designed and built the 777 in 6 years, yet it took nearly 20 years to build the C-17 (Battershell, 1999). P and W's commercial engine division reduced cost by 35% and production time from eighteen to six months for airline industry customers (Womack & Jones, 1996). In fact, P and W designed, built and entered full rate production of the GP7200 engine for the A380 Airbus in less than 5 years (Pratt & Whitney, 2005). Contrast this with the engines for the F-22, which took P and W more than 12 years to develop at the exact same facility (Global Security.org; Aeropropulsion Testing, 1998), and the problem becomes apparent. We are not convinced that the development differences can be attributed solely to more exacting, or even more technically difficult, specifications. Knowing that profit maximization is a company's number one goal, and considering that contract delays appear to be at odds with achieving this goal, we consider the question, "Are announced contract delays perceived as wealth-increasing for shareholders?"

Using event study methodology, we investigate one possible explanation by examining the relationship between announced DoD contractual delay and the stock price of the affected company. Paul Kaminski,

[1] A program is categorized as ACAT I if it meets the following criteria: 1. Designation as a Major Defense Acquisition Program (MDAP), because its estimated total expenditures for research, development, test and evaluation is $365 million in FY2000 constant dollars, or for procurement, a total of more than $2.190 billion in FY2000 constant dollars.