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**Market Dominance, Efficiency, Innovation, and Globalization:
A Case Study of the Tanker Competition
between Boeing and Northrop Grumman/EADS**

01 July 2009

by

Dr. Nayantara Hensel, Assistant Professor
Graduate School of Business & Public Policy

Naval Postgraduate School

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Abstract

The purpose of this analysis is to provide a case study of the competition between Boeing and Northrop Grumman/EADS for the Air Force refueling tankers contract and to discuss the role of many of these considerations in the controversy. This is an important case study because it highlights: (a) the concerns of the American people that they are continuing to lose manufacturing jobs overseas and the solutions that they are considering to lessen that problem; (b) the conflict between the concept of the US and European defense companies as partners against common threats to provide the best systems possible and the concept of them as competitors; (c) the concerns of an incumbent that it is losing its traditional edge; and (d) the desire to have an open and fair government procurement process in which all parties are able to accept the outcome that the process produces. This case study explores the background behind the contract, the reactions to the awarding of the contract, the reasons for the awarding of the contract, and the likely implications of the Boeing and Northrop Grumman/EADS competition for the competing firms, the government contracting process, and the global market.

Keywords: tankers, Boeing, Northrop Grumman, EADS, competition



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I. Introduction

In the twenty years following the end of the Cold War, the defense industrial base in the US has witnessed many changes. First, reductions in defense budgets during the 1990s contributed to consolidation among US defense contractors. Many defense industry sub-sectors manifested a 2/3 reduction in the number of prime contractors and came to be dominated by larger defense giants formed from the consolidations of Lockheed Martin, Boeing, Northrop Grumman, Raytheon, and General Dynamics. Second, the overall US economy witnessed an acceleration of the already apparent shift toward the services sector and away from the overall US industrial base in key manufacturing industries, such as steel and automobiles. As US manufacturing wages became globally uncompetitive, the corporate giants of an earlier era, burdened with generous pension plans and wage/benefit contracts with unions, went bankrupt. Third, the post 9/11 period has witnessed a broad range of security threats, including the emergence of a new type of threat in the form of terrorist groups. Many of these threats transcend the boundaries of nation-states and pose significant risks to all the members of the global community. Fourth, the new millennium has encouraged greater transparency and fairness in processes, ranging from corporate practices in the post-Enron world, to more up-to-date and open government procurement practices. These trends have resulted in the coalescence of the military forces of nation-states around the globe against these various security threats, including the threat of terrorism. Innovation continues to be important for the large US defense contractors as they compete with smaller entrants in a more open government procurement process, struggle against the concern that the US industrial base is shrinking overall and being replaced by overseas manufacturing, and handle the dual role of foreign companies as allies and as competitors.

The purpose of this analysis is to provide a case study of the competition between Boeing and Northrop Grumman/EADS for the Air Force refueling tankers



contract and to discuss the role of many of these considerations in the controversy. This is an important case study because it highlights: (a) the concerns of the American people that they are continuing to lose manufacturing jobs overseas and the solutions that they are considering to lessen that problem; (b) the conflict between the concept of the US and European defense companies as partners against common threats to provide the best systems possible and the concept of them as competitors; (c) the concerns of an incumbent that it is losing its traditional edge; and (d) the desire to have an open and fair government procurement process in which all parties are able to accept the outcome that the process produces. This case study will explore the background behind the contract, the reactions to the awarding of the contract, the reasons for the awarding of the contract, and the likely implications of the Boeing and Northrop Grumman/EADS competition for the competing firms, the government contracting process, and the global market.



II. Prelude to the Announcement

During the past several years, recapitalization of the US Air Force (USAF) has become an increasingly high priority. An important example of this imperative is the USAF's need to upgrade its aerial refueling tankers. The average age of the existing KC-135 tankers is 47 years (Wolf & Shalal-Esa, 2008) and the planes were first put into service in 1957 ("Analysts," 2008). The Air Force has 531 tankers from the Eisenhower period and 59 tankers built by McDonnell Douglas in the 1980s ("Northrop group," 2008), prior to its merger with Boeing in 1997. Seeking to replace its aging tanker fleet, the Air Force conducted a competition to award the initial \$35 billion contract. Some have referred to the contract as "one of the largest military contracts in history" (Hinton, 2008b, March 11). This award was to constitute the first of three awards that could ultimately be worth \$100 billion ("Northrop group," 2008; "Boeing to protest," 2008), as the Air Force gradually replaces its existing 600 tanker fleet. The contract may involve the most expensive purchase in defense history, with the exception of the F-35 Joint Strike Fighter made by Lockheed Martin (Wolf & Shalal-Esa, 2008).

While there was some uncertainty over who the winner of the contract would be, many analysts thought that it would be Boeing because it had been providing refueling tankers to the USAF for almost 50 years and had what was often referred to as a "monopoly." ("Northrop group," 2008). An Associated Press article on February 22, 2008, reported, "The incumbent is considered the favorite to win—an assumption already reflected in its stock price" (Tessler, 2008, February 22). Indeed, the office of Texas Senator Kay Bailey Hutchison actually issued a statement on the morning of the announcement, February 29, 2008, (which it later retracted) that Boeing was the winner (Drawbaugh, 2008, February 29), while a poll of 10 industry analysts indicated that all of them were predicting a win by Boeing (Wolf & Shalal-Esa, 2008). Nevertheless, the Air Force did not release any hint of their decision prior to their announcement. Indeed, as of February 28, the day before the



announcement, General Michael Moseley (Chief of Staff, USAF) noted that “he himself did not know whether Boeing or Northrop Grumman would be awarded a potential \$40 billion deal.” He stated, “As you know by policy and law, I’m not in the acquisition business and have no idea which airplane I’m going to get” (Wolf, 2008, February 28).

There was, however, some indication prior to the announcement that the Air Force was concerned about a protest from the losing competitor. This could have been because the contract was so lucrative and important, and they felt that the loser would be disappointed. In addition, some officials may have anticipated that if Boeing, the incumbent tanker manufacturer, lost the contract, then it would be more likely than Northrop Grumman or EADS to launch a protest. As early as February 22, 2008, it was reported that “the Air Force has said it expects a protest and has been extra careful in documenting its decision-making process” (Hinton, 2008, February 22). Lieutenant General Raymond Johns, the Air Force Deputy Chief of Staff for Strategic Plans and Programs, noted, “We will not let politics dictate the best tanker for the Air Force” (Hinton, 2008, February 22). General Mosely continued in his February 28 statement that he hoped that whoever lost the contest would not challenge the result by lodging a protest with the GAO, which would then have 100 days to make a recommendation as to whether the contract competition should be re-opened. His observation reflected concern about delaying the timeline for the delivery of the tankers to the USAF (Wolf, 2008, February 28).



III. The Announcement

On February 29, 2008, after the markets closed, the Air Force announced that the Northrop Grumman/EADS bid for the aerial refueling tanker had won the contract (Wolf, 2008, February 29). As mentioned earlier, this comprised the first of three awards that could ultimately be worth \$100 billion (“Northrop group,” 2008; “Boeing to protest,” 2008), although the winner of this competition would not necessarily be the winner of the subsequent competitions (Wolf & Shalal-Esa, 2008). The contract awarded was actually worth \$1.5 billion, covering 4 test aircraft. The intent was then to buy 175 more planes, for a total value of \$35 billion. The Air Force hoped to operate the new tankers in 2013 (Wolf & Shalal-Esa, 2008). While the \$35 billion amount would stretch over 10-15 years, an additional \$60 billion in revenue could come from maintenance and parts (Hinton, 2008b, March 11).

The tanker in the winning bid, the KC-45, was a modification of the Airbus A330 (Hepher, 2008, March 3). Air Force General Arthur Lichte noted that the KC-45A provided “[m]ore passengers, more cargo, more fuel to offload” and that the bigger capacity of their tanker had been an important consideration in awarding the contract (“Northrop group,” 2008). The Northrop tanker carried more fuel—250,000 pounds—than the Boeing tanker at 202,000 pounds (“Tanker Deal,” 2008). Loren Thompson at Lexington Institute was quoted as observing that “With Northrop, the military could have ‘49 superior tankers operating by 2013’ [...] while Boeing’s proposal would give it ‘only 19 considerably less capable planes’” (“Tanker Deal,” 2008).



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IV. Reaction to the Announcement and the Differences in the Two Bids

Almost immediately following the announcement that its bid had not been selected, Boeing indicated that it was upset at the decision. On Friday, February 29, 2008, following the award of the contract, Boeing released an announcement stating, “We believe that we offered the Air Force the best value and the lowest risk tanker for its mission. Our next step is to request and receive a debrief from the Air Force” (“Analysts,” 2008). Boeing noted that it would not decide on whether to formally appeal the contract decision until after the Air Force had briefed them on why the contract had been awarded to the Northrop/EADS team (“Northrop group,” 2008). On Tuesday, March 4, the Air Force agreed to provide a briefing sooner to Boeing after Boeing had alleged that delaying a briefing until March 12 would be “inconsistent with procurement practices.”

In its public press release requesting an immediate briefing on the tanker, Boeing argued,

“based on values disclosed in the Air Force press conference and press release, the Boeing bid, comprising development and all production airplane costs, would appear less than the competitor. In addition, because of the lower fuel burn of the 767, we can only assume our offering was more cost effective from a life cycle standpoint [...]. Initial reports have also indicated that we were judged the higher risk offering [...]. Northrop and EADS are two companies that will be working together for the first time on a tanker, on an airplane they’ve never built before, under multiple management structures, across cultural, language, and geographic divides [...]. Initial reports also indicate there may well have been factors beyond those stated in the RFP, or weighted differently than we understood they would be, used to make the decision. (“Boeing Requests,” 2008).”

On March 5, 2008, Jim Albaugh, CEO of Boeing’s Integrated Defense Systems, argued that Boeing had provided the Air Force exactly what was requested in their RFP and for a lower amount than the \$35 billion price indicated (Carpenter, 2008). In response to General Lichte’s comment that the greater size of the



Northrop/EADS tanker was important in the decision-making process, Albaugh argued that, “In our reading of the RFP, it wasn’t about a big airplane. If they’d wanted a big airplane, obviously we could have offered the 777. And we were discouraged from offering the 777” (Carpenter, 2008).

On Friday, March 7, 2008, Boeing met with the Air Force to receive its briefing on why it lost the contract (Palmer, 2008). After the meeting, Boeing stated that it was “seriously considering” launching a protest (“Boeing: Far,” 2008). While the Air Force had said that the Northrop Grumman/EADS bid did better than the Boeing bid on four of the five criteria, Boeing claimed that it scored marks which were identical to those of Northrop/EADS on the five main criteria (Rigby, 2008, March 11). John Young from the Pentagon reiterated that there were “substantial capability and cost differences” between the two proposals (Rigby, 2008, March 11). Following the briefing, Boeing had 10 days to file a protest with the GAO. Then, the GAO would have 100 days to determine if the contract had been awarded fairly or if a new competition would be needed (Wolf, 2008, March 7).

On Monday, March 10, 2008, Boeing announced that it would challenge the decision (“Boeing to challenge,” 2008). Boeing argued that the Air Force had changed its requirements on the amount of ramp space and how closely the tankers could be parked to each other and that “the changes were designed to keep them [Northrop] in the competition” (Hinton, 2008a, March 11). Boeing felt that the process was “replete with irregularities,” which “placed Boeing at a competitive disadvantage” and that “the original mission for these tankers—that is a medium-sized tanker where cargo and passenger transport was a secondary consideration—became lost in the process, and the Air Force ended up with an oversized tanker” (“Boeing Protests,” 2008). Mark McGraw, manager of Boeing’s tanker programs, stated, “As the requirements were changed to accommodate the bigger, less capable Airbus plane, evaluators arbitrarily discounted the significant strengths of the KC-767, compromising operational capabilities, including the ability to refuel a more versatile array of aircraft such as the V-22 and even the survivability of the tanker during the



most dangerous missions it would encounter” (“Boeing Protests,” 2008). McGraw did not think that Boeing had made a mistake in this competition and stated, “Last year we won nine out of 11 major competitions we went after. I think we know how to win competitions” (Wingfield, 2008).

On March 11, 2008, Secretary of the Air Force Michael Wynn stated that the Air Force did not steer Boeing away from proposing a larger plane and that “these are competent suppliers. They can read a proposal” (Rigby, 2008, March 11). Late on Tuesday, March 11, the Air Force stated that this decision gave “the best value to the American taxpayer and to the warfighter” and that they continually provided the bidders with feedback on their proposal to “provide transparency, maintain integrity, and promote fair competition,” while suggesting that the larger size of the Northrop/EADS tanker was very much a deciding factor (Tessler, 2008, March 11). Nevertheless, the 767 model had some advantages over the Airbus 330-200 model. The Boeing tanker could land on narrower, shorter airstrips, such as those in developing countries in Africa or in Afghanistan (Hinton, 2008, February 22).

One of the concerns cited by critics of the Northrop/EADS-proposed tanker design was that the Northrop/EADS tankers were larger and would require more fuel (Shalal-Esa, 2008, March 4), which would be problematic if fuel prices increased. On March 17, 2008, Boeing released a report stating that, over the next 40 years, it would cost the Air Force an extra \$30 billion in fuel costs to operate the 179 Airbus A330-200 refueling tankers relative to a similar number of Boeing tankers. The A330-200 requires 24% more fuel than the 767-200ER. At \$100 per barrel for oil, the Airbus fleet would cost the Air Force \$25 billion more in fuel costs over 40 years, while at \$125 per barrel, it would be \$29.8 billion more. At Boeing’s briefing, the Air Force did note “that they placed little value on fuel and maintenance lifecycle costs” (“Boeing Study,” 2008).

Boeing, in many ways, behaved like a traditional, incumbent corporate giant who was upset that its traditional turf was being encroached upon. Many of Boeing’s arguments, discussed previously, focused on the fact that they did not understand



the Air Force's preferences, and that, consequently, they did not provide a more innovative model of tanker. In 2007, Boeing only sold 36 Boeing 767's—a variation of which was proposed by Boeing for the tanker competition—and, having sold 1,000 over the past 30 years, only had 51 left to deliver by the spring of 2008. This suggested that, in the absence of additional orders, the 767 assembly lines near Seattle would close down. The 787 Dreamliner, on the other hand, which is a successor to the 767, received 369 orders in 2007 (Rigby, 2008, March 3). Boeing argued that, "To some extent, the requirements [of the Air Force] steered us to the 767" (Vorman & Wolf, 2008). EADS, on the other hand, read the same RFP as Boeing yet proposed a more innovative model of tanker, particularly in designing a new boom. Indeed, on March 4, EADS confirmed that it had completed the first test of the Air Refueling Boom System for the aircraft ("EADS confirms," 2008).

Boeing has had a previously difficult history with Air Force tankers. In 2004, Congress voted to overturn the USAF plan to lease and buy 100 modified KC-767 tankers from Boeing for \$23.5 billion following a Pentagon procurement scandal in which one of the key Air Force procurement officials, Darleen Druyen, and the CFO of Boeing, Michael Sears, went to jail. The scandal was brought to light partially with the assistance of Senator McCain's office (Wolf & Shalal-Esa, 2008). It is unclear whether this in any way impacted the decision, other than that the prior history of scandal encouraged the Air Force to make this procurement decision very transparent and well-documented and that the scandal delayed the Air Force's strategy of replacing its aging tanker fleet.

Boeing has had a history of tardiness and delays, which weakened its argument that it is a reliable supplier. For example, it delivered its first tanker to Japan in late February 2008, when the original target date had been in 2005. By the spring of 2008, Boeing was two years behind schedule with orders placed by the Italian government (Rigby, 2008, March 3). Furthermore, Boeing experienced delays on the 787 Dreamliner, which led to a decline in its stock price during 2007 and 2008 (Rigby, 2008, March 3). Indeed, before the contract results were announced, on



February 21, Japan Air Lines, one of Boeing's best customers, announced that it was considering buying some Airbus A350 XWR planes due to the production delays for the Boeing 787s. Due to the lateness of the planes, some airlines, such as Air India and Qantas, have stated that they are likely to seek financial compensation from Boeing (Tessler, 2008, February 22). News on delays continued to be announced after the awarding of the tanker contract to Northrop/EADS.

Many analysts felt that Boeing's protest would not succeed. Analysts, such as George Shapiro at Citigroup argued that Northrop/EADS would end up keeping the contract but that the dispute would take 6-9 months to resolve (Hinton, 2008a, March 11). Myles Walton, an analyst at Oppenheimer & Co, stated "given the initial judgment by the Air Force combined with the Northrop team's better score on four out of five criteria, we anticipate Boeing's protest will be denied" (Rigby, 2008, March 11). On March 18, 2008, Mark McGraw, the tanker manager for Boeing, stated "We know it's an uphill battle" and that "I think the best we can hope for is another shot—perhaps a portion of the competition being re-run" (Wolf, 2008, March 18). Northrop's tanker manager, Paul Meyer, rated the chance of the GAO upholding Boeing's protest as "low" (Wolf, 2008, March 18).

Moreover, complaints had often been unsuccessful with the GAO. Only 249 of the 1,327 bid complaints lodged with the GAO in 2006 received an official decision and of those, 71% of the time the GAO denied the complaint and supported the government's earlier decision ("Boeing to protest," 2008). In fiscal year 2007, of the 1,393 cases filed and closed, 16% of them were ruled to have merit by the GAO (Crown & Epstein, 2008).

The GAO's report in mid-June 2008, upheld 8 of Boeing's 100 protests and focused on procedural errors in the competition rather than on an assessment of the two competing proposals. For example, the GAO argued that although the RFP requested competitors to meet as many of the technical requirements as they could, the USAF did not take into account that Boeing had satisfied more of the non-mandatory technical requirements than Northrop/EADS. In addition, the GAO noted



that although the RFP had noted that “no consideration will be provided for exceeding [key performance parameter] objectives,” the Northrop proposal was deemed superior partially because it did exceed a key performance parameter linked to aerial refueling capacity. Although the USAF informed Boeing at one point that it had satisfied a key performance parameter objective, it later decided that Boeing had not met that objective but did not inform Boeing. Finally, the GAO identified a series of errors in the USAF’s calculation of the lifecycle costs of the two proposals and felt that, when these errors were corrected, Boeing’s proposal had a lower lifecycle cost than the Northrop/EADS proposal (GAO, 2008, June 18).



V. Should the Contract be Awarded to a Foreign Contractor?

One of the central concerns surrounding the awarding of the contract was that Boeing, an American firm, had lost its bid to a contracting team which involved a foreign contractor. This concern embodied several issues: (a) the possibility that US defense jobs were being lost to the European defense sector; (b) concerns that systems key to national security would be made by a foreign contractor; and (c) an overall fear that the US manufacturing industry is shrinking and that the economy is shifting toward services. Indeed, in the official press releases, Northrop Grumman was referred to as the winner of the contract, with the role of EADS being downplayed (Morgan, 2008).

The Congressional representatives from the regions in Washington, Kansas, and Connecticut that would have benefited if Boeing had received the contract strongly protested the decision. The Congressmen from the Seattle area claimed to be “outraged,” while Kansas Representative Todd Tiahrt stated that he would seek a review of the contract decision (Drawbaugh, 2008, February 29). On Monday, March 3, 2008, a group of lawmakers from Kansas and Washington wrote to Defense Secretary Robert Gates and asked that the Air Force explain to Boeing why it lost the contract rather than wait until mid-March to do so (Drawbaugh, 2008, March 3). On March 5, 2008, members of the Congressional delegation from Connecticut formally requested a briefing on why Boeing had lost the contract. Their concern was linked to the fact that the engines for the Boeing tanker would have been made by Pratt & Whitney, based in East Hartford, Connecticut and the electrical systems would have been made by Hamilton Sundstrand in Windsor Locks, Connecticut (“Conn.,” 2008). On March 7, 2008 the Kansas Senate adopted a resolution with a unanimous vote asking the President and Congress to block the contract (“Kan. Senate,” 2008). On March 11, 2008, Representative Todd Tiahrt of Kansas



announced that he was developing a bill to block funding for the Northrop tanker (Drawbaugh, 2008, March 11).

On the other hand, the Northrop Grumman/EADS tanker would have created jobs in the US, especially in Alabama, and the Alabama Congressional delegation was very supportive of the results. Senator Richard Shelby (Alabama) noted that the contract would bring 7,000 jobs to Alabama (Drawbaugh, 2008, February 29) and that “[a]ny assertion that this award outsources jobs to France is simply false” (Drawbaugh, 2008, March 3). Senator Jeff Sessions (Alabama) noted, “In reality, what we’re talking about is the insourcing, into America, of an aircraft production center that would bring 2,500 jobs to our area and 5,000 to our state” (Drawbaugh, 2008, March 3). Kansas Representative Tiahrt, on the other hand, stated, “I cannot believe we would create French jobs in place of Kansas jobs,” while a joint statement of lawmakers protesting the decision noted, “We are outraged that this decision taps European Airbus and its foreign workers to provide a tanker to our American military” (Drawbaugh, 2008, March 3).

Actually, both the Boeing tanker and the Northrop/EADS tanker would have created jobs domestically and overseas. About 85% of Boeing’s tanker would have been made in the US. Boeing argued that 44,000 new and existing jobs would have been supported by the contract across 40 states and 300 suppliers. Wichita, Kansas and Everett, Washington would have been major locations for tanker production, and the engines in the tanker, made by Pratt & Whitney, would have been made in Connecticut. Nevertheless, some portions of its tanker would have been made overseas—the tail in Italy and the fuselage in Japan (Tessler, 2008, March 6).

About 60% of the Northrop/EADS tanker would have been made in the United States. This tanker was originally projected to create 25,000 jobs nationwide, including several thousand jobs in Mobile, Alabama, where the final assembly work was to have taken place (Vorman & Wolf, 2008). General Electric would have built the engines for the Northrop/EADS tankers in North Carolina and Ohio (“Northrop group,” 2008) and expected to make \$5 billion from the contract (Witkowski, 2008).



The contract would, however, also have assisted the European defense industry. The wings would have been manufactured in the UK, such that 9,000 jobs would have been created. GE Aerospace's British arm would also have been involved (Lagorce, 2008, March 3). The Airbus-330, of which the KC-45 is a modification, would have had parts made in Germany, France, Spain, and Great Britain, but assembly of the KC-45 would have occurred in Mobile, AL (Wolf & Shalal-Esa, 2008). While Northrop argued that the contract would result in 2,000 jobs shifting to the US from Europe, EADS argued that the assembly plants in Mobile would lead to the creation of new jobs in the US, not in jobs moving from Europe to the US ("Northrop Grumman," 2008).

Labor unions in the US were concerned that the Air Force had not considered US jobs when they awarded the contract and that EADS had received subsidies from European governments for years, creating a playing field which was not level. On March 3, 2008, the Association of Machinists and Aerospace Workers requested Congress to enact legislation preventing the US from awarding contracts to overseas companies receiving government subsidies since, in a complaint filed by the US Trade Representative, the EU had been accused of providing subsidies to Airbus which were anticompetitive (Vandore, 2008, March 3). Airbus CEO Tom Enders, in response to criticism that Airbus was destroying more American jobs due to its subsidies than it could create by building tankers in the US, noted that they sourced \$11 billion from the US for Airbus and have been the largest single customer outside the US for the aerospace industry (Hepher, 2008, March 7).

The AFL-CIO and the United Steelworkers Union also echoed concerns about sourcing the contract to a foreign manufacturer (Shalal-Esa, 2008, March 4). In a statement reported on March 3, 2008, the General Vice President of the International Association of Machinists and Aerospace Workers, Rich Michalski, said, "President Bush and his administration have today denied real economic stimulus to the American people and chosen instead to create jobs in Toulouse, France" ("Boeing calls," 2008). Hillary Clinton, who was the Senator from New York



at the time, stated that “she found it ‘troubling the government would decide to award the contract to a team including a European firm it is simultaneously suing at the World Trade Organization for receiving illegal subsidies’” (Lagorce, 2008, March 3). Barack Obama, who was the Senator from Illinois at the time, was also concerned that Boeing, based in Chicago, had lost the contract (Daly, 2008). Similarly, French unions protested the loss of assembly jobs to the US since the tankers would be assembled in Mobile, AL (“EADS confirms,” 2008).

Debates concerning job creation and destruction, similar to those in the tanker controversy, have occurred in a variety of different US manufacturing industries over the past twenty years and focus on the broader issue of whether the US should get the best product at the lowest cost or artificially try to prop up uncompetitive industries. Senator McCain noted, “I’ve never believed that defense programs should be—that the major reason for them should be to create jobs. I’ve always felt that the best thing to do is to create the best weapon system we can at cost to taxpayers” (Drawbaugh, 2008, March 3). These thoughts were echoed in the comments of Pentagon acquisition chief John Young, who noted, “I don’t think anybody wants to run the department as a jobs program,” further arguing that lawmakers usually focused on asking him to reduce the costs of weapons systems and that a decision by Congress to ban sourcing of contracts to foreign companies could lead to reciprocal retaliation on the part of the Europeans (Shalal-Esa, 2008, March 4). Defense Secretary Robert Gates stated that “defense manufacturing was a global business” and that “we sell aircraft and ships and weapons systems all over the world. The four countries that I just visited in Asia and in the Middle East—Australia, Indonesia, India, and Turkey—all have an interest in acquiring American aircraft, as an example” (“Northrop Grumman,” 2008).

The preceding comments reflect an awareness of the defense industry as a global industry in which the US, Europe, and other countries need to unite to combat global threats at various levels, including the terrorist threat. The growing interconnectedness between various countries is evident across a variety of other



industries in our global economy. Furthermore, Boeing itself is an example of a global firm in that it makes weapons systems for other countries, so it would have been hard for it to argue that it would be unfair for a government to outsource a contract to a foreign supplier. Boeing sells C-17 planes to the UK, Australia, and Canada; F-15 jets to Japan, Korea, and Singapore; and aerial refueling tankers to Italy and Japan. Of the \$66.4 billion comprising Boeing's 2007 revenue, about \$27.1 billion came from overseas sales (commercial and military). Sales to Europe comprised \$6.3 billion, of which 16% of that came from sales to the military (Tessler, 2008, March 6). Overall, about 13% of Boeing's total revenues from defense production came from overseas and included contracts to produce rockets in France, "early-warning" systems in South Korea and Turkey, and helicopters in Saudi Arabia, Israel, and Egypt. About 5% of Northrop Grumman's revenues in the defense arena came from contracts with other countries (Wingfield, 2008).



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VI. Implications of the Contract Award

A. Toward Greater Global Cooperation?

The award of the tanker contract to a team which included a foreign contractor was indicative of the recognition of the importance of forming a global effort with the most innovative products against a variety of immediate and long-term actual and potential threats. French President Nicholas Sarkozy stated on March 3, “If Germany and France had not shown from the beginning that we were friends and allies of the United States, would it have been possible to have such a commercial victory?” (Hepher, 2008, March 3). Significantly, EADS failed in a similar competition in 2003, at the time when the then-President of France, Jacques Chirac, was opposing the involvement in Iraq. Sarkozy, on the other hand, had established closer ties with the US, as evidenced by France’s support of the US position on Iran’s nuclear activities (Hepher, 2008, March 5). Consequently, while the initial victory of the Northrop/EADS team was based on the perception that their product was better, it may have been assisted by greater US-French cooperation.

Other defense firms also saw the award of the contract to Northrop/EADS as a positive move toward open markets. Bob Stevens, CEO of Lockheed, said in response to the award of the initial contract that this “should put an end to well-worn laments that the US markets are closed to European interests or that the US is unwilling to partner for the long term with industry in NATO countries” (Wardwell, 2008). Nevertheless, after the GAO handed down its ruling, Stevens tried to emphasize that the ruling was rooted in process-related issues and noted that, “I don’t think that the tanker should be viewed as a trade issue as much as an acquisition issue” (Wardwell, 2008). This may partially be because of concerns of retaliation on the part of European manufacturers if Northrop/EADS lost the contract. Indeed, the EU’s lucrative \$118 billion defense market was recently opened up to more cross-border competition through a newly drafted European Commission directive on defense procurement.



Although the popular press noted that concerns about national security could be key in involving a foreign contractor in manufacturing US weapons systems, there have been other instances in which foreign contractors have worked on key US defense projects. For example, EADS has been working on a \$2 billion Army contract for two years to replace 345 “Huey” helicopters in addition to providing the Coast Guard with radar systems and search-and-rescue aircraft (Wingfield, 2008). The presidential helicopter was partially built by Italy’s Finmeccanica, while Britain’s BAE systems have been involved in a number of US DoD projects since it purchased United Defense Industries in 2005 (Lagorce, 2008, March 3). Significantly, Boeing did not discuss national security issues in its formal protest (Wingfield, 2008), possibly for this reason. Moreover, all classified military technology on the KC-45a would be installed by Northrop after the aircraft was assembled, so that EADS would not be handling it (Hinton, 2008, March 10).

Although Boeing painted the conflict as a competition between a US company and a European one, much of its concern was that of a traditional incumbent watching its competitor and arch-rival, Airbus, encroach on one of its key contracts. This is not the first time that Boeing and EADS have competed over a tanker contract. Since 2001, Boeing and EADS have faced each other in competitions for tankers in six countries, of which EADS has won four of the competitions to supply a total of 25 planes (Saudi Arabia, UAE, Australia, and Britain), while Boeing has won in Italy and Japan to supply 8 planes (“Boeing’s trouble,” 2008).

The reasons why EADS has triumphed in some of the other competitions is that, in recognition of a global marketplace, the contract was initially awarded to the bidder that seemed the most sensitive to the needs of the client, the most flexible, and the most willing to make investments in the relationship. EADS, as a newcomer in the tanker business, manifested the traditional behavior of a successful entrant in terms of being innovative and absorbing risk, while Boeing played the role of the traditional incumbent. For example, Boeing and BAE Systems in the UK competed against EADS for a \$26 billion contract to replace the UK’s fleet of military refueling



tankers in 2004 and lost the contract to EADS, which had not built a tanker before and which had proposed a modification of the commercial Airbus A330. The UK felt that EADS was more willing to make concessions and assume the financial risk in constructing the planes and then leasing them to the government, whereas Boeing did not offer such terms. Although Boeing's C-17 transport plane had been successful there, the tanker business had been handled by a different division of Boeing than the C-17. The competition in Australia provides another illustrative example in that the Australian government was impressed by EADS' willingness to use its own R&D money to develop and test a boom, whereas Boeing used an older boom in its proposal and suggested that it would build a newer type of boom only if it won the large US contract ("Boeing's trouble," 2008).

B. Impact on Boeing

Analysts have suggested that Boeing's initial loss of the contract to the Northrop Grumman/EADS team was "part of a gradual erosion in Boeing's defense operations" and that this loss, combined with the reputational loss from the earlier tanker procurement debacle in 2004, has not been helpful to its image (Rigby, 2008, March 3). Some analysts, such as John Kutler, have noted that, "I thought, for a number of reasons, it would be difficult for the Air Force to pick Boeing," arguing that when Rumsfeld in 2006 jettisoned the plans to lease Boeing 767's, change might be in the wind ("Analysts," 2008). Furthermore, Boeing's delays on the 787's have not provided it with the aura of a reliable supplier. On the other hand, EADS may face similar delays and only time will tell if that will occur since its contracts with UAE and Saudi Arabia were signed last year, the Australian tankers aren't due until 2009, and the British tankers aren't due until 2011 ("Boeing's Trouble," 2008).

Recently, several of Boeing's contracts have run into problems. The "virtual fence" project along the border between the US and Mexico has been pushed back three years to 2011 due to technical problems, and the company has spent twice the amount of the \$20 million contract to fix these problems. The GAO, in February 2008 found that three contracts with Boeing cost the government \$3 billion more, with cost



overruns of as much as 30% coming from higher expenses in labor and materials (Caterinicchia & Tessler, 2008).

Would Boeing be at a disadvantage in other competitions for tankers domestically and abroad if Northrop/EADS were to be re-awarded the contract? This is possible, given that EADS' tankers, as discussed previously, have been chosen over Boeing's tanker in several other competitions. If this trend continues, and Japan and Italy end up with "orphan fleets"—i.e., they are the only countries with Boeing tankers—then these fleets may cost more to maintain than if Boeing had developed the scale economies in costs to maintain the parts through obtaining other contracts, especially the US contract. As a result, other potential customers may be less likely to choose Boeing in the competition when they see these higher maintenance costs, and the cycle will become self-reinforcing ("Boeing's Trouble," 2008).

The loss of the tanker contract in itself would not affect Boeing on an annual basis in that it only would have led to 12-18 additional tankers per year, which is a small number in comparison to the 450 commercial aircraft that it makes each year (Tessler, 2008, March 6). But, since it is a very large contract in the long-run, at a time when defense expenditures could plateau, it could have long-range significance.

On the other hand, even while the tanker contract announcement and protests were at their peak in late February through mid-March 2008, Boeing was still announcing new orders and the award of new contracts. For example, on February 25, 2008, before the contract decision on the tankers became public, Boeing won a \$77 million contract with the Air Force to install 37 infrared, anti-missile systems ("Boeing Wins \$77M," 2008). On March 5, it was reported that Boeing and Bell Helicopter (part of Textron) had won the contract to provide the V-22 Osprey with spare parts—a \$204.5 million Navy contract ("Boeing, Bell," 2008). On March 13, Boeing won a \$32.8 million contract to provide the Air Force with Combat Survivor Evader Locator radio systems ("Boeing wins \$32.8M," 2008). On March 14, Boeing won a \$28.2 million contract to provide the Navy with parts for the



Growler attack aircraft (“Boeing wins \$28.2M,” 2008). As of mid March, 2008, Boeing also listed orders for 85 new planes (“Boeing shares,” 2008). Finally, on March 17, Raytheon and Boeing won \$89.5 million worth of contracts to provide radar systems to the Air National Guard and to the Air Force (“Raytheon,” 2008).

The key to Boeing’s long-run success has been its ability to innovate and to be willing to modify its products to the needs of the customer. Merely satisfying the stated requirements of the customer is not always the best strategy in an increasingly competitive global marketplace where there are many new entrants. Moreover, Boeing needs to continue to invest in assets specific to its relationship with customers. Hopefully, its protest on the awarding of the tanker contract to Northrop/EADS and the resulting delay in the Air Force’s time trajectory in obtaining new tankers will not reflect negatively on its long-standing relationship with the Air Force. Nevertheless, Boeing needs to focus on the lessons from its loss in this competition and other competitions rather than expending significant energy combating the outcome of these decisions.

C. Impact on EADS

The award of the highly publicized tanker contract to the Northrop Grumman/EADS team would have provided EADS with a much-needed boost. Financially, it has been struggling for several reasons: (a) the weak dollar during 2007-2008—EADS sells its airliners in dollars, but often pays its suppliers in euros (Hepher, 2008, March 3); (b) the financial impact of its delays with the A-380 and, recently, with the A400M (Lagorce, 2008, March 3), which was supposed to debut in July 2008 but which has been delayed through 2009 (Hepher, 2008, March 7); and (c) some flattening in customer expenditures relative to previous years. On March 11, 2008, the reported losses for 2007 were worse than expected. EADS’ net loss was 446 million euros in 2007 (the net loss was forecast at 329 million euros) and represented a deterioration from its 99 million euro profit in 2006. The rise of the euro reduced the revenue at Airbus by \$1 billion (Hepher, 2008, March 11).



EADS was delighted when the contract was initially awarded to them and Northrop Grumman partially because they hoped that the contract would provide them with a greater capability to penetrate the US defense market and possibly to position them better to win future contracts. The existing EADS aerial refueling tanker had already won competitions in Australia, Saudi Arabia, the UAE, and Britain (Hepher, 2008, March 3), and its success in the US marketplace against an established competitor would have helped it to gain greater traction. Indeed, on March 27, 2008, a consortium led by EADS (and also including Rolls Royce, Cobham and Thales, and the VT Group) won a \$26 billion contract in the UK over 27 years to provide 14 Airbus 330-200 tankers to replace the RAF's aging fleet of VC-10 and Tristar refueling tankers. This contract had been under negotiation since 2004, and the success of the Northrop/EADS bid in the US may have helped to generate positive momentum (Pfeifer, 2008). EADS' initial success in the US contest and the UK contest vindicated its strategy to increase its defense capabilities and not to depend entirely on commercial programs.

D. Implications for the Government Procurement Process

The initial award of the tanker to the Northrop/EADS consortium suggested that the government procurement process did not always favor incumbents and that there was an increasing emphasis on obtaining the most appropriate product at the best cost as well as that, as Defense Secretary Robert Gates had stated, "defense manufacturing is a global business" ("Northrop Grumman," 2008), particularly as the US had allied with many other countries in combating the War on Terror.

The role of Congressional representatives in this case study sets important precedents for the government procurement process. The initial award of the tanker to the Northrop/EADS team suggested that the government procurement process does not always favor incumbents, that there is an increasing emphasis on obtaining the most appropriate product at the best cost, and that the transparent, open process is often open to the global marketplace, especially when the range of national security threats—such as the terrorist threat—is more globally focused.



Nevertheless, Congressional representatives who did not support the initial award have suggested that even if the procurement process awards the contract to Northrop/EADS for the second time, they will block the funding of the tanker. If this occurs, it will send a signal that the political landscape—factors such as which states benefit from the award of a given contract and which Congressional representatives have greater power—can overturn a decision made by defense procurement experts who are weighing cost and quality issues between competitors with deliberation over a period of months. As discussed in Hensel (2008), this may lead to greater reluctance on the part of contractors to make the necessary investments to create the best product at the lowest cost to the government. Rather, the contractors may focus on locating production in states that have powerful Congressional representatives instead of in states that have the lowest cost or that are otherwise more appropriate for production. If this, indeed, occurs, it could lead to a reduction in innovation since the focus will have shifted from the quality of the product to the importance of political considerations within Congress. Indeed, it reduces the importance of having a transparent and well-documented government procurement process if Congress can ultimately block the funding for the winning proposal anyway.



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VII.

Epilogue

The USAF announced on July 9, 2008, that it would reopen the competition and would focus it on the 8 areas of protest sustained by the GAO. Unlike the previous competition, which was overseen by the USAF, this competition would be overseen by John Young, the chief of weapons procurement and the Undersecretary of Defense for Acquisition, Technology, and Logistics at the Pentagon. Following the issuance of its new RFP, the Pentagon planned to provide the bidders with 45 days to present new proposals, with the winner of the new competition being selected by early January 2009. The Air Force stated explicitly that in the new competition, it would provide extra credit for a larger plane with additional fuel offload capacity (Shalal-Esa, 2008, July 9; Shalal-Esa & Wolf, 2008; Wallace, 2008). Loren Thomson from the Lexington Institute noted, “It appears that the Pentagon’s default process is to fix the process and then award the contract to Northrop Grumman again” (Hinton, 2008, July 21). The USAF planned to extend the definition of the time period over which lifecycle costs were calculated from 25 years to 40 years, which favored the Boeing proposal, due to its lower fuel costs. Nevertheless, it also planned to separate lifecycle costs from acquisition costs and to give greater weight to the nearer-term acquisition costs, which could reduce the advantages of Boeing’s proposal (Hinton, 2008, March 10).

Boeing, which now had the opportunity to propose the larger 777 in light of this “extra credit” suggested in the draft RFP, claimed that it would pull out of the competition if it were not provided with more time to develop a modified 777. This would have led to a delay in the process and would have pushed the decision of the tanker winner into the next administration and Congress (Epstein, 2008). The USAF, faced with the possibility of a competition with only one participant—Northrop/EADS—announced in mid-September 2008 that it would cancel the competition and that it would re-open it in the next administration. A new RFP was



reissued to potential competitors on September 25, 2009, with the goal of having the winner selected by the summer of 2010.



VIII.

Conclusion

As of this writing, the outcome of the tanker competition has not been settled, although the new RFP was issued to potential competitors on September 25, 2009. Due to the global focus on the financial crisis, which began in the fall of 2008, it is possible that concerns over job loss and job creation in the various proposals could be magnified as various regions of the US, as well as the European countries, continue to struggle with rising unemployment.

The initial award of the contract to the Northrop/EADS team was significant for several reasons. First, it indicated that the Air Force was anxious to get the best product at the lowest cost. EADS' willingness to innovate was seen in other competitions and in its R&D to create a new boom. Both its innovative tendencies and its flexibility are hallmarks of a successful entrant into a new industry, while Boeing's focus on its pre-existing tanker models and the degree to which they met the specifications stated by the Air Force was indicative of the behavior of a traditional incumbent. Second, the willingness to award the contract to a team involving a foreign contractor suggested the recognition that the defense industry has become a global industry that is sufficiently robust to respond to a range of threats to the security of the global community.

The protests against the award, however, emphasized the fact that the Northrop/EADS team included a foreign competitor. The discussions and statements of many of the opposing Congressional representatives focused on the need to prevent American jobs from going overseas, despite the fact that the Northrop/EADS contract would have created some jobs in the US, especially in the port of Mobile, AL. This type of argument is often made to protect a declining industry or a failing incumbent against lower-cost, more innovative products made by industries overseas. It encourages the placement of temporary bandages on the problem rather than an exploration into the heart of why the industry or firm in question is uncompetitive and the development of strategies to make the industry or firm



successful. Boeing's own arguments in its official protest, however, focused more on the differences between the two products and the guidance that it received from the Air Force rather than on the issue of US jobs going overseas—this latter argument was made more by Congressional representatives in the affected areas.

In conclusion, the tanker competition embodies many of the key debates across industries in the US economy. Changes in the overall US industrial base, rising fuel prices, the weakness of the dollar, and the range of threats confronting the global community—including the threat posed by terrorism—are important forces in making a procurement decision. Hopefully, the outcome which best serves the American people and the US military will emerge from the dialogue between Boeing, Northrop Grumman/EADS, the Air Force, the GAO, and Congress and will reinforce the move towards more transparent processes, the best product at the lowest cost, and the recognition of a more global defense environment.



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- Energy Saving Contracts/DoD Mobile Assets
- Financing DoD Budget via PPPs
- Lessons from Private Sector Capital Budgeting for DoD Acquisition Budgeting Reform
- PPPs and Government Financing
- ROI of Information Warfare Systems
- Special Termination Liability in MDAPs
- Strategic Sourcing
- Transaction Cost Economics (TCE) to Improve Cost Estimates

Human Resources

- Indefinite Reenlistment
- Individual Augmentation
- Learning Management Systems
- Moral Conduct Waivers and First-tem Attrition
- Retention
- The Navy's Selective Reenlistment Bonus (SRB) Management System
- Tuition Assistance

Logistics Management

- Analysis of LAV Depot Maintenance
- Army LOG MOD
- ASDS Product Support Analysis
- Cold-chain Logistics
- Contractors Supporting Military Operations
- Diffusion/Variability on Vendor Performance Evaluation
- Evolutionary Acquisition
- Lean Six Sigma to Reduce Costs and Improve Readiness



- Naval Aviation Maintenance and Process Improvement (2)
- Optimizing CIWS Lifecycle Support (LCS)
- Outsourcing the Pearl Harbor MK-48 Intermediate Maintenance Activity
- Pallet Management System
- PBL (4)
- Privatization-NOSL/NAWCI
- RFID (6)
- Risk Analysis for Performance-based Logistics
- R-TOC Aegis Microwave Power Tubes
- Sense-and-Respond Logistics Network
- Strategic Sourcing

Program Management

- Building Collaborative Capacity
- Business Process Reengineering (BPR) for LCS Mission Module Acquisition
- Collaborative IT Tools Leveraging Competence
- Contractor vs. Organic Support
- Knowledge, Responsibilities and Decision Rights in MDAPs
- KVA Applied to Aegis and SSDS
- Managing the Service Supply Chain
- Measuring Uncertainty in Eared Value
- Organizational Modeling and Simulation
- Public-Private Partnership
- Terminating Your Own Program
- Utilizing Collaborative and Three-dimensional Imaging Technology

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