OTHER TRANSACTIONS: Meeting The Department of Defense's Objectives

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I. Introduction

A shrinking defense budget, a shrinking defense industrial base, and the location of the technology needed by the Department of Defense to meet its national security requirements are realities that have had an impact on how the Department of Defense (DoD) acquires research and development. In addition, DoD's objectives for science and technology, acquisition reform, and civil/military integration, also effect how DoD acquires research and development. Today's challenge for DoD is to develop an acquisition strategy for acquiring research and development that will address these realities while achieving DoD's objectives.

This paper will discuss an authority, known as "other transactions," which, if properly implemented, could become an effective tool in DoD's acquisition strategy to acquire research and development. To this end, this paper attempts to answer three questions: Why did DoD end up with other transaction authority? Is it necessary? What is its future?

In answering these questions, chapter two will discuss DoD's objectives for science and technology, acquisition reform, including a series of reports which analyze how DoD should acquire research and development, and civil/military integration. Chapter three will discuss DoD's basic statutory authority for the use of other transaction instruments to acquire research and development. It will give an overview of the authority's legislative history, the

legal status of other transactions, the types of other transactions, and the applicability of federal procurement statutes and regulations to an other transaction agreement.

Chapter four will analyze DoD's implementation of its other transaction authority, including the current status of DoD's implementation, the characteristics that have emerged from DoD's implementation, and the challenges that DoD must address in order to accomplish successful implementation. Finally, chapter five will summarize how this authority could become a key tool in helping DoD meet its challenge of creating a successful acquisition strategy to acquire research and development that addresses the realities facing DoD while achieving DoD's other objectives.

II. Department of Defense Objectives

DoD's objectives for science and technology, acquisition reform, and civil/military integration impact DoD's acquisition strategy for acquiring research and development. They also address certain realities facing DoD, including a shrinking defense budget, the location of the technology DoD needs, and the shrinking of the defense industry. Arguably, these objectives are the foundation for why DoD sought out another authority, namely other transactions, to acquire research and development.

A. *Department of Defense Science and Technology Strategy*[1]

"Technological superiority has been, and continues to be, a cornerstone of our national military strategy."[2] Conducting research and development, although costly and time consuming, is critical to ensure continued global stability, and specifically, the United States' national security.[3] The vision of DoD's Science and Technology (S&T) Strategy is to "[d]evelop and transition

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[1] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY (May 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998. The Department of Defense's science and technology program is guided by the National Security Science and Technology Strategy, the military departments, the Joint Chiefs of Staff and the unified commanders. *See* OFFICE OF SCIENCE AND TECHNOLOGY, NATIONAL SECURITY SCIENCE AND TECHNOLOGY STRATEGY (Sept. 1995) (explains the Clinton Administration's science and technology policy) and OFFICE OF SCIENCE AND TECHNOLOGY, TECHNOLOGY IN THE NATIONAL INTEREST (1996) (discusses the Clinton Administration's technology policy and programs that support this policy). For a discussion on federal technology policy *see* Lewis Branscomb et al., *Investing in Innovation: Toward a Consensus Strategy for Federal Technology Policy* 7 (April 24, 1997) available at http://www.ksg.harvard.edu/iip/techproj/home.html, visited on May 25, 1998; LEWIS M. BRANSCOMB & JAMES H. KELLER, INVESTING IN INNOVATION: CREATING A RESEARCH AND INNOVATION POLICY THAT WORKS (1998); and Roland W. Schmitt, *Beyond Competitiveness: Technology Policy for the 1990's*, 5 STAN. L. & POL'Y REV. 119 (1993).

[2] DEPARTMENT OF DEFENSE, 1998 DEFENSE TECHNOLOGY OBJECTIVES (1998) Introduction and Summary, available at http://www.dtic.mil/dstp/98_docs/dtos/intro.htm, visited on May 26, 1998. There are several documents that set out the strategic planning process for the Department of Defense's science and technology program. The document that presents the foundation for the program is the *Defense Science and Technology Strategy*. It is supported by the following documents: the *Basic Research Plan*, the *Joint Warfighting Science and Technology Plan*, the *Defense Technology Area Plan*, and the *Defense Technology Objectives*. These documents are responsive to the Joint Chiefs of Staff *Joint Vision 2010* and the National Science and Technology Council's *National Security and Technology Strategy*. *Id.* The *National Military Strategy* points out seven equally important capabilities which DoD must maintain in order to meet its role in ensuring the United States security. These core capabilities include strategic deterrence, decisive operations, special operations, forcible entry, force protection, countering weapons of mass destruction, focused logistics, and information operations. CHAIRMAN OF THE JOINT CHIEFS OF STAFF, NATIONAL MILITARY STRATEGY OF THE UNITED STATES OF AMERICA 24-27 (September, 1997). The *National Military Strategy* is advice provided from the Chairman of the Joint Chiefs of Staff on the strategic direction of the Armed Forces. It "describes the strategic environment, develops national military objectives and the strategy to accomplish those objectives, and describes the military capabilities required to execute the strategy." *Id.* at 5. The United States Armed Forces is the military instrument that ensures the countries security. The United States military's primary purpose "is to deter threats of organized violence against the United States and its interests, and to defeat such threats should deterrence fail. . . . The Armed Forces' core competence is the ability to apply decisive military power to deter or defeat aggression and achieve [the United States] national security objectives." *Id.* at 5

superior technology to enable affordable, decisive military capability."[4] DoD's objective is "to develop options for future decisive military capabilities based on superior technology."[5] DoD's ultimate challenge for its science and technology program is to put the best available technology[6] into the hands of its customer, the warfighter, in a timely and cost effective manner.[7]

The DoD S&T Strategy sets out four generic considerations, including affordability, dual use, accelerated transition and a strong industrial base, which have a high priority when DoD is determining which technologies it will pursue.[8]

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[3] *See generally* DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998.

[4] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 1 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998.

[5] *Id.*

[6] *See generally* DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 3 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998. A key characteristic for the warfighters is spectrum dominance. Full spectrum dominance is "the capability to dominate an adversary across the full range of military operations." This characteristic is heavily dependent on obtaining information superiority which in turn makes information technologies the "silver bullet" the warfighters. "The Joint Staff has articulated twelve high-priority warfighting needs, called Joint Warfighting Objectives." These objectives provide a focus for the goals of the Defense Science and Technology program. The twelve objectives are: information superiority, precision force, combat identification, joint theater missile defense, military operations in urban terrain, joint readiness, joint countermine, electronic warfare, information warfare, chemical/biological agent detection, real-time logistics control, and counterproliferation. *Id.* at 5-10.

[7] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY preface (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998. This strategy recognizes that information technologies, such as computing systems that distribute near-real time information to all levels of operations, are critical to achieving the dominance DoD seeks. *Id.* For an overview of DoD's Science and Technology Program *see* Statement of Under Secretary of Defense for Acquisition and Technology Honorable Jacques S. Gansler, Before the Subcommittees on Procurement and Research and Development House Committee on National Security, A&T Overview, February 26, 1998 and Statement of the Under Secretary of Defense for Acquisition and Technology Honorable Paul G. Kaminiski, Before the Acquisition and Technology Subcommittee of the Senate Committee on Armed Services on DOD FY 1998 Acquisition and Technology Program, March 11, 1997.

[8] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 11 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998. In light of declining budgets, affordability has become a priority for DoD's S&T program. To meet the warfighters needs DoD must consider reduced costs of development and procurement and life-cycle operation. *Id.* at 11-12.

These considerations shape DoD's strategic investment priorities. The first consideration is affordability. As DoD faces the challenge of modernizing the Armed Forces within budget constraints, the S&T program must provide timely and affordable advanced technology.[9]

The second consideration, dual use technologies,[10] is based on the fact that technologies critical to future warfighting are being developed commercially and internationally.[11] The DoD S&T Strategy recognizes that DoD must rely increasingly on the same industrial base that builds commercial products and that budget constraints limit DoD's ability to sustain a defense-unique industrial base. DoD's S&T Strategy recognizes that "a common commercial and defense industrial base will serve defense needs better, enhance US economic competitiveness, and provide US industry with the benefit of combined, larger markets."[12] The S&T program, through utilization of commercial practices and products, will help build a common industrial base which will develop technology

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[9] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 11-12 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998.

[10] Dual use technologies are those technologies that have both defense and non-defense applications. Secretary of Defense William Perry Memorandum, *DoD Domestic Technology Transfer/Dual Use Technology Development* (June 2, 1995) available at http://dtic.dla.mil/techtransit/techtransfer/perry.html, visited on Jan. 19, 1998. Dual use technology development is an integral element of DoD's pursuit of its national security mission. *Id. See generally* DEPARTMENT OF DEFENSE, DUAL USE TECHNOLOGY: A DEFENSE STRATEGY FOR AFFORDABLE, LEADING-EDGE TECHNOLOGY (Feb. 1995), available at http://www.acq.osd.mil/es/dut/dufinal.html, visited on July 4, 1998 (discusses DoD's dual-use technology strategy as a way to break down barriers between commercial and defense industries and to facilitate the integration of a "national industrial capability"); NATIONAL ECONOMIC COUNCIL, NATIONAL SECURITY COUNSEL, OFFICE OF SCIENCE AND TECHNOLOGY POLICY, SECOND TO NONE: PRESERVING AMERICA'S MILITARY ADVANTAGE THROUGH DUAL-USE TECHNOLOGY (Feb. 1995) (discusses dual-use technology strategy as the way to move toward a "single, cutting-edge national technology and industrial base").

[11] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 12 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998.

[12] *Id.* Defense industries will still be needed to produce large weapon systems and sustain unique defense needs. *Id.*

that will serve as a "base for both military and commercial products and applications."[13]

The third consideration, accelerated transition, focuses on maintaining technological superiority through fielding new state-of-the-art systems, within reduced budgets, and at a rapid pace which is set by the technology revolution.[14] One of the keys to this priority is the use of Advanced Concept Technology Demonstrations (ACTDs). The idea is to put the technologies in the hands of the warfighter so they have the opportunity to evaluate the technologies' value. The objective is "to focus S&T on supporting the military needs and problems, speed transitions, and provide a sound basis for acquisition decisions."[15] The purpose of the fourth and final consideration, a strong technology base,[16] is to maintain a stable technology base investment which will develop options for the future.[17]

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[13] *Id.*

[14] *Id.*

[15] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 13 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998. "The DoD S&T program is structured to accelerate movement of technologies through the continuum to maturity through Advanced Technology Demonstrations (ATDs) and Advanced Concept Technology Demonstrations (ACTDs). ATDs are the military Departments' and Defense Agencies' narrowly focused technology demonstrations, to identify key technologies ready for transition and demonstrate their performance parameters. ACTDs are DoD's broadly-based proof of concept demonstrations, to evaluate the military utility of mature advanced technologies." *Id.* at 17. An ACTD gives the operational forces in the field the ability to use the new technology and evaluate what changes need to be made to the technology so that it improves operational concepts and tactics. *Id.*

[16] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 13 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998. "Within the S&T program, the Technology Base is the name given to the basic research, applied research, and education of scientists and engineers that provides the foundation for future military development and applications." *Id.*

[17] *Id.* DoD will continue to rely on universities, industry and DoD laboratories to ensure a stable technology base is maintained. *Id.*

The DoD S&T Strategy also sets out five guiding principles for management and oversight of DoD's S&T program. These guiding principles include transition technology to address warfighting needs, reduce cost, strengthen the Industrial base, promote basic research, and assure quality.[18] DoD acknowledges that a balanced approach to "technology, product and process development" is important given the realities of budget cuts. These principles, therefore, through leveraging the best resources in the United States, are designed to put the best capabilities in the hands of the warfighters.[19]

With respect to the first principle, transitioning technology to the warfighters, the challenge for DoD is to transition affordable technology to the warfighters "faster than it is supplied to the international market."[20] To meet this challenge DoD must "work with the warfighters" because it is they who must determine what capabilities are needed which in turn will determine what systems will be purchased.[21]

The second principle, reducing cost, which includes the objective of reducing the acquisition and life-cycle costs, is equal to the objectives of performance and developing new capabilities.[22] One of the ways this objective will be achieved is through using the best commercial products, practices, and

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[18] DEPARTMENT OF DEFENSE, DEFENSE SCIENCE AND TECHNOLOGY STRATEGY 21-42 (May, 1996) available at http://www.dtic.mil/dstp/96_docs/strategy/strategy.htm, visited on May 26, 1998.
[19] *Id.* at 22.
[20] *Id.* at 23. DoD is faced with the fact that regional adversaries, although lacking the ingenuity to develop the best technologies, can buy the best technologies in the international arms market. *Id.*
[21] *Id.* at 23.
[22] *Id.* at 27.

processes. This use is summarized as follows:

> [t]he Department of Defense must exploit national and international commercial practices, standards, technologies, products, and protocols as the rule, rather than the exception. . . . Investments in dual-use technology and products with potential for both defense and commercial applications can encourage commercial companies to reduce the time to reach production, and reap benefit from the economies of scale that derive from commercial, mass markets. Where DoD needs unique items, the objective is to manufacture them on flexible production lines.[23]

The third management principle, strengthening the industrial base, is grounded in the goal of using the same technology and industrial base to develop military and commercial products. This concept, known as dual use, means that technologies, processes, and products will have both military and non-military application.[24] DoD's strategy acknowledges that

> [i]t is imperative that DoD foster, to the maximum extent practical, an integration of military and commercial industry in order to achieve a more cost-effective, single set of industrial enterprises that are capable of developing and building more affordable and productive military and commercial products.[25]

DoD realizes that it is "crucial" that DoD establish a close connection with the science community outside DoD. DoD's strategy also recognizes, as part of strengthening the industrial base, that commercial technologies increasingly can be used to meet defense needs. In order to exploit these commercial

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[23] *Id.* at 28.

[24] *Id.* at 31. "A technology or process may first be developed for a military context and then be applied to commercial use, or vice-versa." *Id.*

[25] *Id.* at 32. "DoD has along history of sustained investment both in technology development and in industrial process maturation that directly contributed to commercial economic growth and job creation. This has been one of the strengths of the DoD S&T program." *Id.*

technologies, DoD must create incentives that will facilitate the insertion of commercial technology into defense systems.[26]

The fourth management principle, promoting basic research, has five objectives. These objectives are focused on continued discovery of new knowledge that will ensure that the U.S. is not technologically surprised and that there is training for the next generation of scientists and engineers.[27] Finally the last management principle, assuring quality, is focused on obtaining quality not quantity. This means fewer but better scientists, facilities and products.[28]

B. *Acquisition Reform Within the Department of Defense*

The Department of Defense's overall objective for its acquisition process is to make it "faster, cheaper and better."[29] However the defense industry that grew up after World War II became layered with government procurement regulations,[30] which increased the cost of doing business for DoD.[31] Many of

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[26] *Id.* at 34.
[27] *Id.* at 35.
[28] *Id.* at 35-37.
[29] *See* DEPARTMENT OF DEFENSE, DEFENSE SCIENCE BOARD, REPORT OF THE DEFENSE SCIENCE BOARD ACQUISITION WORKFORCE SUB-PANEL OF THE DEFENSE ACQUISITION REFORM TASK FORCE ES-1 (Mar. 1998) The Defense Science Board (DSB) believes that DoD's efforts to make the acquisition process faster, cheaper and better should be measured against the warfighter's perspective and an appropriate "business" perspective. The DSB described how a better, cheaper, and faster acquisition process will directly benefit the warfighters mission. Better is described as "[b]etter acquisition ensures that the warfighter has the high-quality, leading edge systems needed to maintain technological superiority on the future battlefields." Cheaper is described as "[c]heaper acquisition enables the Department to make the best possible use of limited resources and ensures that the warfighter gets the greatest return from each dollar." Faster is described as "[f]aster acquisition enables systems to move from system commitment decision to fielding more quickly in order to be available for the warfighter when needed." *Id.* at ES-1.
[30] *See* JACQUES S. GANSLER, DEFENSE CONVERSION: TRANSFORMING THE ARSENAL OF DEMOCRACY 19, 20 (1995) (In 1989, Dr. Gansler summarized the DoD procurement system as follows: "The [DoD] spends over $100 billion every year in about 15 million separate contract actions. . . . These actions are carried out by more than 150,000 government acquisition personnel and another 300,000 supporting government acquisition personnel, using 30, 000 pages of

these regulations were enacted by Congress "to curb abuses and to foster goals other than efficient procurement of defense equipment."[32] These conflict with DoD's objective for fast and efficient procurements and have resulted in "high costs, long procurement times, inefficient production, and restricted access to technology."[33] Therefore DoD has been faced with deciding whether or not it has the luxury of continuing to incur the cost related to its heavily regulated procurement system. Recent acquisition reform initiatives appear to be a signal that DoD is realizing that it cannot continue to incur the costs of this system at the expense of its other objectives.

In 1994 the Secretary of Defense reported to Congress that dramatic changes had to be made to the current acquisition process.[34] Since that time

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regulations issued by seventy-nine different offices. The process is overseen by twenty-nine congressional committees with fifty-five subcommittees and 28,000 congressional staff members. This activity is monitored in minute detail by 26, 000 government auditors who are assisted by numerous public-interest groups and newspaper reporters. On the industrial side, millions of people employed in firms both large and small, public and private, operate within this Byzatine maze of regulations and oversight that make up the unique way in which business is conducted in the defense arena.") *See also* U.S. Congress, Office of Technology Assessment, *Holding the Edge: Maintaining the Defense Technology Base, Volume II, Appendixes* at 17-20, OTA-ISC-432 (Jan. 1990) (discusses the increased congressional oversight since the 1970's stating that in 1970 the defense authorization act was 9 pages and the conference report that accompanied it was 33 pages and stating that 29 committees and 55 subcommittees oversee defense activities).

[31] *See* DEPARTMENT OF DEFENSE, THE DOD REGULATORY COST PREMIUM: A QUANTITATIVE ASSESSMENT (Dec. 1994).

[32] OFFICE OF TECHNOLOGY POLICY, HOLDING THE EDGE: MAINTAINING THE DEFENSE TECHNOLOGY BASE, Summary at 5 (1989). The report lists several laws and regulations that have been added to ensure "civilian control over military procurement, Administration control over Service activities, congressional control, protection of congressional constituent interests, environmental protection, fairness, competition, accountability, honesty, controllable business practices, minority interests, small business interests, protection against conflicts of interest, and prevention of large profits at taxpayer expense." *Id.* at 5-6.

[33] *Id.* at 6.

[34] Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* (Feb. 1994) available at http://www.acq.osd.mil/ar, visited on June 30, 1998.

DoD's procurement system has been undergoing substantial reform.[35] This reform has been targeted at streamlining provisions in the Federal Acquisition Regulation (FAR).[36] The FAR has been viewed as a cumbersome set of regulations, the use of which, increases what the government pays for goods and services.[37]

1. DoD Acquisition Reform Objectives

As mentioned above the overall objective of acquisition reform is "to do the job better, cheaper, and faster."[38] It is one of DoD's top five priorities in its

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[35] In 1993, pursuant to congressional direction the DoD Advisory Panel on Streamlining and Codifying Acquisition Law, known as the Section 800 panel, prepared an 1,800 page report which became the blueprint for future acquisition reform laws. National Defense Authorization Act for Fiscal Year 1991, Pub. L. No. 101-510, § 800, 104 Stat. 1587, 1588 (Nov. 5, 1990) and DoD Acquisition Law Advisory Panel, *Streamlining Defense Acquisition Laws*, Report to the United States Congress, Department of Defense (Jan. 14, 1993). For a summary of the Section 800 panel's report *see* DoD Acquisition Law Advisory Panel, *Streamlining Defense Acquisition Laws: Executive Summary* (Mar. 1993). The following acquisition reform laws have been passed since 1994: (a) The Federal Acquisition Streamlining Act of 1994 (FASA), Pub. L. No. 103-355, 108 Stat. 3243 (1994); (b) the Information Technology Management Reform Act of 1995 (ITMRA), Pub. L. No. 104-106, 110 Stat. 642 (1996); and (c) the Federal Acquisition Reform Act of 1996 (FARA), Pub L. No. 104-106, 110 Stat. 679 (1996). FARA and ITMRA have been renamed the Clinger-Cohen Act.

[36] *See* DEBRA VAN OPSTAL, CENTER FOR STRATEGIC & INTERNATIONAL STUDIES, ROAD MAP FOR FEDERAL ACQUISITION (FAR) REFORM (1995) (discusses history of federal acquisition regulation reform).

[37] Department of Defense, THE DOD REGULATORY COST PREMIUM: A QUANTITATIVE ASSESSMENT (December 1994). The following true story serves as a vivid example of the impact of the FAR. "Martin Marietta made two proposals for launching a communications satellite: one to a private sector firm to launch an Intelsat, and one to the U.S. government to launch a Geostat. The proposal to the private sector cost Martin Marietta $1,000 to prepare and was ten pages long. The proposal to the government cost $1,000,000 and was 10,000 pages long." JACQUES S. GANSLER, DEFENSE CONVERSION: TRANSFORMING THE ARSENAL OF DEMOCRACY 137 (1995) An Administration's task force recommended that the government should move toward conducting its business under a set of guiding principles instead of the 'rigid rules' of the FAR. It has been argued that this set of guiding principles could be patterned after the commercial business world's Uniform Commercial Code. *Id.* at 138-140.

[38] Under Secretary of Defense Acquisition and Technology The Honorable Jacques S. Gansler, Defense Modernization: Transforming The Way The Pentagon Does Business, Remarks at the National Contract Management Association (Feb. 18, 1998) (transcript available at http://www.acq.osd.mil/ousda/speech/ncma.dinner.html, visited on March 21, 1998). In a recent interview, Mr. Soloway, the Assistant Secretary of Defense (Acquisition Reform) stressed that speed has become a critical factor in the acquisition process because of today's fast-pace of technology development. *New DOD Acquisition*, 69 FED. CONT. REP. (BNA) No. 18, at 514 (May

"Revolution in Business Affairs,"[39] and it focuses on providing systems that are responsive, efficient, and smart.[40] DoD's acquisition reform vision is that "DoD will be recognized as the World's smartest, most efficient, and most responsive buyer of best-value goods and services that meet our warfighters' needs from a globally competitive national industrial base."[41]

Acquisition reform is also an integral part of other DoD reform initiatives. For example, by identifying "real barriers," a DoD acquisition reform team is playing a critical role in achieving civil-military integration which is discussed below.[42] Likewise one of the four pillars in the *Defense Reform Initiative*[43] is

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4, 1998). Mr. Soloway stated that DoD's major weapons systems take 12 to 15 years to field. Therefore with a technology cycle of 18 months, DoD will be fielding systems that are out of date. *Id.*

[39] The Under Secretary of Defense for Acquisition and Technology (Dr. Jacques S. Gansler) has stated that the way DoD will pay for the required modernization of the Armed Forces is through a "Revolution in Business Affairs." Statement of Dr. Jacques S. Gansler, Under Secretary of Defense (A&T)-designate before the Committee on Armed Services, United States Senate (Oct. 1, 1997); Under Secretary of Defense Acquisition and Technology Jacques S. Gansler, Defense Modernization: Transforming The Way The Pentagon Does Business, Remarks at the National Contract Management Association (Feb. 18, 1998) (transcript available at http://www.acq.osd.mil/ousda/speech/ncma.dinner.html, visited on March 21, 1998). The five priorities for achieving this revolution are acquisition reform, civilian/military industrial integration, restructuring support systems, reengineering logistics systems, and training the acquisition workforce. *Id. See also Acquisition Chief Nominee Gansler See 'Business Revolution' as Key to Modernization,* 68 Fed. Cont. Rep. (BNA) No. 12, at 341-342 (Oct. 6, 1997) and *New DOD Acquisition Chief Gansler Sets Goal of Modernizing Weapons With Business* Revolution, 39 GOV'T CONTRACTOR (Fed. Pubs. Inc.) 3, 4 (Nov. 12, 1997).

[40] Acquisition Reform Benchmarking Group, *DoD 1997 Final Report* (June 30, 1997), available at http://www.acq.osd.mil/ar/arbg/arbgmain.htm, visited on June 30, 1998. Some of the specific acquisition reform initiatives listed in this report include integrated product teams/integrated product-process development, specification and standards reforms, single process initiative, procurement process re-engineering, and expanded reliance on modeling and simulation. *Id.*

[41] Defense Acquisition Reform, available at http://www.acq.osd.mil/ar.mission.htm, visited on June 30, 1998. The four objectives for DoD's acquisition reform mission includes: 1) adapting the best practices of "world class" customers and suppliers; 2) continuous improvement of the acquisition process with a goal of ensuring that it remains flexible and agile; 3) provide incentives for its acquisition professionals to innovate and manage risk instead of avoiding it; and 4) take advantage of technologies that allow business process reengineering and enterprise integration. *Id.*

[42] *New DOD Acquisition*, 69 FED. CONT. REP. (BNA) No. 18, at 514 (May 4, 1998). Acquisition reform team members are focusing on six areas some of which include "organizational and workforce impediments to civil-military integration," "contract formation challenges that impede

reengineering DoD business practices by adopting the modern business practices.[44] Finally, in the National Defense Panel's *Transforming Defense: National Security in the 21st Century*,[45] acquisition reform, specifically an acquisition process that is responsive and efficient, is "an essential element" of the Panel's transformation strategy.[46]

Specifically, the National Defense Panel found that in the twenty-first century DoD will depend increasingly upon a global technology base for the technologies it needs to develop for its future weapon systems. The Panel's prediction, namely that this technology base will have a strong commercial orientation, is based on the observation that "civilian technologies are likely to offer their services to the highest bidder."[47] The Panel also observed that the only way for the United States to maintain a technological advantage is through "time-based competition," which means "the ability to rapidly develop and deploy military applications of commercial technologies."[48] The Panel stated that failure to reduce the current system-development time, which averages over a decade,

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civil-military integration" and "impediments to effect performance through effective contract administration and government-imposed manufacturing processes." *Id.*

[43] *See* DEPARTMENT OF DEFENSE, DEFENSE REFORM INITIATIVE (Nov. 1997) (defines a series of initiatives which will be conducted under the following four pillars: 1) reengineering which means adopting modern business practices to achieve top performance; 2) consolidation which includes streamlining organizations to remove redundancy; 3) competition which includes applying market mechanisms to reduce costs and meet customer requirements; 4) elimination which includes reduce excess support structure and focus on core competencies).

[44] DEPARTMENT OF DEFENSE, DEFENSE REFORM INITIATIVE iii (Nov. 1997). *See also* News Release, Office of Assistant Secretary of Defense (Public Affairs), *Secretary Cohen Reshapes Defense For the 21st Century*, Nov. 10, 1997.

[45] NATIONAL DEFENSE PANEL, TRANSFORMING DEFENSE: NATIONAL SECURITY IN THE 21ST CENTURY (Dec. 1997). This report was mandated by Section 924 of the Military Force Structure Act of 1996 and focuses on long term issues facing the United States defense and national security. *Id.*

[46] *Id.* at 75.

[47] *Id.* at 74.

[48] *Id.*

will jeopardize the United States technological advantage which is a key component of the United States' national strength.[49] The Panel recommended the following:

> an acquisition strategy that is designed to foster innovation and to enable new technology to get to the field quickly. It would direct development and fielding of a small number of units of new weapon systems, avoiding large infrastructure investment and long, high rate production runs until new systems are validated.[50]

The Panel recognized that DoD needs to reform the way it acquires systems. Thus, one element of this reform is to rely on commercial practices which means that the acquisition regulations will have to be modified to accommodate this.[51] Finally, the Panel recognizes that the current acquisition system, which is complex, lengthy and reactive, is fifty years old and a product of the Cold War.[52] The Panel's recommendation to fix the problems of the current system was the following

> [t]he Department of Defense needs to provide industry with incentives to innovate so that we may maintain a qualitative technology edge so that the United States will continue to be preeminent in military technology. Rather than being reactive, we should make our military acquisition process proactive. The Department must work with Congress to devise new rules and policies that emphasize technology development and de-emphasize the need for large production quantities in order to recover cost and profit. This may create 'sticker shock' on a unit-cost basis but if

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[49] *Id.*

[50] *Id.* at 75. The Panel suggests that joint tests and Advanced Concept Technology Demonstrations (ACTDs) are tools that can be used in the front end of the process to achieve the goal of being able to quickly produce small numbers of new cutting-edge technologies to the Armed Forces. *Id.* at 76.

[51] *Id.* at 75. A comparison of the federal budget between 1968 and 1998 illustrate that priorities have changed. Clay Chandler, *After Decades of Deficits, Expectations of Surplus*, WASH. POST, Feb. 1, 1998 at A14. In 1968 the Defense budget was 46.1 percent of the total federal budget. In 1998 the Defense budget is 15.8 percent of the total federal budget. *Id.*

[52] *Id.* at 76.

we can shorten the development cycle, development costs will be much lower. Moreover, reduced production quantities will reduce total program cost, which is a more relevant measure of the cost to the nation.[53]

2. Factors Driving DoD Acquisition Reform

Some of the factors that are driving DoD towards reforming its acquisition process include declining budgets, the cost of the current procurement system, and the rapid pace of technology development.

a. Force Modernization and Budget Cuts

Declining DoD budgets require DoD to pay attention to the way it is conducting its business.[54] Specifically, DoD is faced with modernizing its Armed Forces in light of the fact that its budget has declined by approximately 40 percent during the past decade.[55] DoD's procurement budget, which is used to purchase major weapons systems, has declined over 60 percent during the past decade.[56] Likewise, DoD's research and development budget has declined and is projected to continue to decline during the next four years.[57]

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[53] *Id.*

[54] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 12 (Mar. 18, 1996 - June 10, 1996), available at http://www.safaq.af.mil/acq_ret.

[55] Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* (Feb. 1994) available at http://www.acq.osd.mil/ar, visited on June 30, 1998. The General Accounting Office (GAO) conducted a review of how much of the cost reductions from acquisition reform will be available to contribute to modernization of the Armed Forces. The services reported $29 billion in estimated cost reductions from acquisition reform. However, the GAO found that only 25 percent of those reductions will be realized between 1995 - 2002. Cost increases will offset some of the savings. The result is that the savings from acquisition reform will not produce a large amount of funds for DoD's modernization programs. GEN. ACCT. OFF., REP. NO. GAO/NSIAD-98-21, *Acquisition Reform: Effect On Weapon System Funding* (Oct. 1997).

[56] Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* (Feb. 1994) available at http://www.acq.osd.mil/ar, visited on June 30, 1998. "In constant dollars, DOD procurement

b. Costs of Current Procurement System

Another major factor facilitating acquisition reform is the cost of the current procurement system. Professor Ralph Nash, in 1995 wrote "[e]nough studies have been conducted to confirm what we all have known for many years – that the DOD regulatory and oversight process is very expensive."[58] Specifically, one study found that the overhead costs of the DoD acquisition process were approximately 40 percent of the DoD acquisition budget.[59] This is in contrast with the 5 - 15 percent overhead cost in commercial companies.[60]

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outlays in fiscal year 1995 were 52 percent smaller than 1987 levels - the highest level since 1946." GEN. ACCT. OFF., REPT. NO. GAO/PEMD-97-3, *Defense Industry: Trends in DOD Spending, Industrial Productivity, and Competition* 1 (Jan. 1997). The period of 1985-1995 "represents the longest consistent decline in the procurement budget" since post World War II. *Id.* at 10 "The greatest 1-year percentage decline in the procurement budget's growth was the 80-percent decline in 1945, following World War II." *Id.* at 9

[57] *Selected Materials From FY1999 Defense Budget Request*, 69 FED. CONT. REP. (BNA) No. 5, at S-4 (Feb. 2, 1998). The table projects the following expenditures by DoD on research and development (also known as RDT&E) 36.6 billion in FY 1998, 36.1 billion in FY 1999, 33.9 billion in FY 2000, and 33.0 billion in FY 2001. A small increase in RDT&E funding is projected for FY 2002 (33.5 billion) and FY 2003 (34.3 billion). *Id.* DoD's procurement budget is expected to increase during FY 1998, FY 1999, FY 2000, and FY 2001. *Id.* However, the Under Secretary of Defense for Acquisition and Technology, Dr. Jacques Gansler, recently warned that DoD may "fall short of the cash it needs for its planned boost of weapons purchases." Thomas E. Ricks and Frederic M. Biddle, *Pentagon's Procurement Chief Warns Of Threat to Weapons-Purchase Boost*, WALL ST. J., May 28, 1998 at A24. Dr. Gansler said he is "worrying about" the possibility of having to cancel one of the major weapons programs in order to keep other programs going. *Id.* Analysts predict that even if DoD cuts its procurement budget most defense contractors will not "suffer much." Tighter Pentagon budgets have less impact on the consolidated defense industry. Two of the three large defense contractors in particular have diversified into commercial space markets. *Id.* For a break out of DoD research and development spending over the past thirty years *see* RONALD MEEKS, NATIONAL SCIENCE FOUNDATION, FEDERAL R&D FUNDING BY BUDGET FUNCTION: FISCAL YEARS 1996-1998 (1997).

[58] Ralph C. Nash, *The Cost of Oversight in Defense Procurement*, 9 THE NASH & CIBINIC REP. ¶ 19 (Mar. 1995). A private foundation has estimated that "[f]ederal regulations will cost the U.S. economy $758 billion in 1997." *Federal Regs to Cost $785B in '97, Group Says*, 68 FED. CONT. REP. (BNA) No. 2, at 35 (July 14, 1997).

[59] Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* (Feb. 1994) (citing the CARNEGIE COMMISSION ON SCIENCE, TECHNOLOGY, AND GOVERNMENT, A RADICAL REFORM OF THE DEFENSE ACQUISITION SYSTEM (Dec. 1, 1992)) available at http://www.acq.osd.mil/ar, visited on June 30, 1998.

[60] Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* 5 (Feb. 1994) (citing CARNEGIE

Another study noted that DoD's regulatory system costs between $15 billion and $75 billion, accounting for 10 - 50 percent of the procurement budget.[61] Yet another study found that defense contractors incur up to 30 percent in additional costs on their government contracts for an identical item on their commercial contracts.[62]

Finally, a 1994 DoD commissioned study concluded that the DoD procurement regulations and oversight requirements basically increase the price of a DoD contract by 18 percent.[63] The study specifically identified ten DoD regulations and oversight requirements that are the key cost drivers.[64] It also identified the specific cost impact of each regulation.[65]

COMMISSION ON SCIENCE, TECHNOLOGY, AND GOVERNMENT, A RADICAL REFORM OF THE DEFENSE ACQUISITION SYSTEM (Dec. 1, 1992)) available at http://www.acq.osd.mil/ar, visited on June 30, 1998.

[61] U.S. Congress, Office of Technology Assessment, *Holding the Edge: Maintaining the Defense Technology Base, Volume II, Appendixes* at 35, OTA-ISC-432 (Jan. 1990). *See* U.S. Congress, Office of Technology Assessment, *Holding the Edge: Maintaining the Defense Technology Base* at 151-152, OTA-ISC-420 (Apr. 1989) (discusses the bureaucratic paralysis caused by DoD's regulatory regime).

[62] Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* 5 (Feb. 1994) (citing Debra van Opstal, CENTER FOR STRATEGIC & INTERNATIONAL STUDIES, INTEGRATING COMMERCIAL AND MILITARY TECHNOLOGIES FOR NATIONAL STRENGTH: AN AGENDA FOR CHANGE (April 1991)) available at http://www.acq.osd.mil/ar, visited on June 30, 1998.

[63] DEPARTMENT OF DEFENSE, THE DOD REGULATORY COST PREMIUM: A QUANTITATIVE ASSESSMENT 12 (Dec. 1994). This is the first time in history a study on how much the DoD regulations cost. Professors' Nash and Cibinic had suggested, in the summer of 1968, twenty six years ago, that such a study be conducted. The response they received after discussing the length of time such a study might take was "But the election is in November." Ralph C. Nash, *The Cost of Oversight in Defense Procurement*, 9 THE NASH & CIBINIC REP. ¶ 19 (Mar. 1995). The study made a detailed assessment of the costs of ten diverse contractors. The study only assessed the cost impact on industry. It did not assess the cost impact on the government. DEPARTMENT OF DEFENSE, THE DOD REGULATORY COST PREMIUM: A QUANTITATIVE ASSESSMENT 3 (Dec. 1994). The ten companies were grouped into three industry sectors: aerospace, electronics/communications, and land/mechanical systems and components. The highest cost premium was in the electronics/communications sector with 25 percent. *Id.* at 14

[64] DEPARTMENT OF DEFENSE, THE DOD REGULATORY COST PREMIUM: A QUANTITATIVE ASSESSMENT 18, 18a (Dec. 1994). The ten regulations identified were MIL-Q-9858A, Truth in Negotiation Act, Cost/Schedule Control System, Configuration Management Requirements, Contract Specific Requirements, DCAA/DCMAO Interface, Cost Accounting Standards, Mat'l Management

The study found that a complex regulatory scheme has been developed by Congress and DoD to maintain accountability for the public and to prevent contract abuses. A web of regulations have resulted from "knee jerk" reactions to alleged abuses.[66] Professor Cibinic calls this the "Regulatory Reaction Syndrome."[67] He describes this "syndrome" as a result of legislators and administration officials reacting to an abuse by passing a statute, which satisfies the public outcry until the next abuse occurs.[68] This process continues but the problem is not solved. Thus, the government ends up with layers of regulations which add significant costs to each government contract.[69]

The study found that the numerous regulations have not only had an impact on cost but also on the "composition and capabilities of the defense

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Accounting System, Engineering Drawings, and Government Property Administration. *Id.* The General Accounting Office (GAO), pursuant to a statutory requirement, reviewed DoD's efforts to reduce the impact of the cost drivers identified in the DoD Regulatory Cost Premium report referenced above. The GAO found that the DoD report did not study the benefits of the regulations and that DoD had only identified actions that would achieve savings of 1 percent. GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-106, *Acquisition Reform: Efforts to Reduce the Cost to Manage and Oversee DOD Contracts* (Apr. 1996).

[65] DEPARTMENT OF DEFENSE, THE DOD REGULATORY COST PREMIUM: A QUANTITATIVE ASSESSMENT 18, 18a (Dec. 1994).

[66] *Id.* at 1.

[67] John Cibinic, *Elimination of Unallowable Costs by Percentage*, 7 THE NASH & CIBINIC REP. ¶ 13 (Mar. 1993).

[68] *Id.* Many of DoD's research and development contracts are conducted under cost-based contracting. Professor Nash describes cost-based contracting as "the system of contracting the Government uses to scrutinize each dollar of cost to ensure that it is 'properly' incurred without any concern about whether the total contract price (or cost and fee) has any relationship to the value of the work performed by the contractor." Ralph C. Nash, *Cost-Based Contracting: The Insanity Continues*, 9 THE NASH & CIBINIC REP. ¶ 8 (Jan. 1995). Professor Nash criticized this system calling it a "slippery slope" where the "rules get more detailed and the administrative costs get higher." He goes on to suggest that the only way the government can become an efficient and effective buyer is though the elimination of cost-based contracting. *Id.*

[69] *See* John Cibinic, *Elimination of Unallowable Costs by Percentage*, 7 THE NASH & CIBINIC REP. ¶ 13 (Mar. 1993). Professor Cibinic recommendation to correct this problem is to change what people do. Contractors need to recognize that there are perceptions with how they charge the government and therefore contractors need to use "good common marketing sense." Likewise the best way for the government to ensure reasonable prices is "to give pricing responsibility to

industry."[70] Defense contractors are finding that it is the ability to deal with the governments regulations that has become their 'core capability,' instead of their technical expertise. In addition, the regulatory environment has created a reluctance by top commercial firms to deal with the government.[71]

c. Access to Technology

Another factor driving acquisition reform is the location of the technology that DoD's needs to meets its mission requirements. One current focus of acquisition reform within the Department of Defense has been to break down barriers created by voluminous procurement regulations so that commercial companies will want to do business with the Department of Defense. It has been suggested that these barriers preclude DoD from doing business with entities that hold the technology needed to meet the national security threats. This will be discussed in more detail later in this paper.

3. Reports On DoD Research and Development

There have been several studies conducted on how the Department of Defense should acquire research and development. Three of the most recent reports are discussed below.

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competent, hard-nosed negotiators and give them the support they need." Finally, he states that auditors must concentrate on auditing and not on making pricing decisions. *Id.*

[70] DEPARTMENT OF DEFENSE, THE DOD REGULATORY COST PREMIUM: A QUANTITATIVE ASSESSMENT 1 (Dec. 1994).

[71] *Id.*

a. 1990 Institute for Defense Analysis

In 1990 the Institute for Defense Analysis (IDA) wrote a paper which was intended to spur a debate on military research and development. As a premise, it stated that the question facing military research and development was: "How can the U.S. maintain its technological superiority for future military systems, given declining defense budgets, lower levels of production for weapon systems, and great uncertainty regarding future military requirements?"[72] The drafters solution to their stated premise is called a flexible acquisition strategy.[73]

The IDA recommends that DoD create a completely new system for acquiring research and development which will support a new strategy of maintaining technological superiority.[74] The IDA recognizes that the role of research and development must change in light of the challenges that U.S. forces face in today's world.[75] The IDA concluded that DoD needs a military research and development system that "generates technological options of sufficient quality and in sufficient numbers so that, in spite of the uncertainty they face, U.S. forces can be fully prepared to meet a wide range of contingencies."[76]

Under the IDA's flexible acquisition process, instead of the current pipeline approach which arguably works for well-defined threats, there would be

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[72] PAUL R. RICHANBACH ET AL, INSTITUTE FOR DEFENSE ANALYSIS, THE FUTURE OF MILITARY R&D: TOWARDS A FLEXIBLE ACQUISITION STRATEGY 1 (July 1990).
[73] *Id.* at 1-2, 22.
[74] *Id.* at 1, 22. The IDA specifically did not recommend patching the old system for acquiring research and development. *Id.*
[75] *Id.* at 1. The strategy of the United States for the past forty-five years has been to maintain technological superiority over one single, defined threat, that of the former Soviet Union. *Id.* Today's threats are more uncertain and ill-defined. *Id.*
[76] *Id.* at 1.

several filters before a system would go into production.[77] This process is similar to the commercial world's model for research and development where "design, development, prototyping, and production decisions are continuous and evolutionary."[78] The underlying idea is that this type of flexible research and development process would give the warfighters more technology and acquisition options.[79]

The IDA makes seven specific recommendations for putting this flexible acquisition strategy in place.[80] Three of their recommendations are discussed below. One recommendation made by the IDA is that research and development should be treated as a product.[81] This premise, which is becoming industry's common business practice today and was common business practice in the 1950's and 1960's, would require DoD to change its current incentive structure to allow industry to make sufficient profits directly on research and development.[82] The IDA recognized that this would present a cultural change to the traditionally "risk-averse" acquisition culture.[83]

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[77] *Id.* at 3. The pipeline approach is described as DoD entering one end of the process with research and development and a production of the weapon system at the other end. Once the system passes a certain filter which is usually very early on in the process it is then basically guaranteed to production. *Id.*

[78] *Id.* at 4.

[79] *Id.* at 4. "This model is consistent with the Packard Commission's recommended approach, which emphasizes the importance of early design and prototyping efforts." *Id.*

[80] *Id.* at 5. The seven recommendations are: DoD should reaffirm its commitment to maintaining technological superiority, funding for science and technology should be increased and problems in DoD's S&T program and laboratories should be addressed, DoD should treat research and development as a product, increase the use of prototyping, modify existing systems, increase the use of commercial technology, and consider mobilization in weapon systems. *Id.*

[81] *Id.* at 14.

[82] *Id.* at 15.

[83] *Id.*

A second recommendation made by the IDA is that DoD should increase its use of prototyping. The IDA stressed the important role of prototyping and stated that prototyping "represents the logical extension of the premise that the R&D process should provide the armed forces with options from which to make weapon system and force structure decisions."[84] The increased use of prototyping will allow DoD to maintain necessary options for diversified threats and it will improve communication between the designers and the users.[85] The result of more prototypes and fewer systems in production, will be an "easing of the time pressure to attain an operating capability."[86] This means that there would be a longer window to mature the design, increased operational testing and an opportunity to reduce the eventual cost of production.[87]

Finally a third recommendation made by the IDA is that DoD should increase the use of commercial technology. There are two primary reasons why this must occur. First, "today DoD is a net recipient of technology" not the net source.[88] Second, it is the only way that DoD will be able to afford new systems. Other reasons include the fact that cutting-edge technology may not be available from traditional defense contractors and that the structure of the armed forces

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[84] *Id.*
[85] *Id.* at 16-17. One of the long standing problems with military research and development has been meeting the "true needs of the forces in the field." *Id.* at 17 Increased use of prototyping is a mechanism to improve this problem. *Id.* at 17. Increased prototyping also means that some systems will never be used however they will have served an important function by providing a "hedge against uncertainty". *Id.* at 16.
[86] *Id.* at 16.
[87] *Id.* at 16-17.
[88] *Id.* at 19.

toward a light mobile force will require equipment which is "more readily producible with commercial components and by commercial methods."[89]

In light of changed budget and national security environments, the IDA concludes that DoD must rethink how it conducts its research and development and its role in the acquisition process. It summarizes its recommendations by saying that a "pipeline" mentality must be replaced with an "options" mentality.[90]

b. 1993 Carnegie Commission Report

In 1993 the Carnegie Commission issued a report titled *New Thinking and American Defense Technology*.[91] In its report the Carnegie Commission called "for complete replacement of the existing [procurement] system by a system patterned on commercial practice, not merely making incremental adjustments."[92] Changes in the military threats, changes in technology and the current DoD acquisition procedures have created the need for a "new thinking" within the DoD. Specifically the Carnegie Commission observed that

> [u]sing the defense technology base as a strategic reserve will entail some changes in how the U.S. Department of Defense (DoD) views the role of the research and development (R&D) it supports. . . . In the future it should be normal practice for DoD to support exploration of weapon concepts – up to and including the early stages of development and prototype testing – that have no immediate prospect of deployment. The technology base will thus become not just the first stage of the acquisition

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[89] *Id.* at 17, 20.
[90] *Id.* at 21.
[91] THE CARNEGIE COMMISSION, NEW THINKING AND AMERICAN DEFENSE TECHNOLOGY (May 1993).
[92] *Id.* at 6. This call for replacing the DoD procurement system is based on overhead rates of the current acquisition system, the incompatibility of weapons systems development and procurement procedures with commercial practices to the detriment of both the civil and defense industrial bases, and the "inertia" of the current system which "makes it impossible to create and mobilize" future U.S. forces which are characterized as "smaller, cheaper, and more flexible." *Id.* at 4-5.

> process, but a forum for analysis and exploration of U.S. options under each of many future political scenarios, a notice to potential enemies of America's latent strength, and a mobilization base if large U.S. forces need to be reconstituted quickly.[93]

Important factors in having a successful acquisition process for high-technology include the ability to access the commercial technology base and the importance of leadership from both the government and industry.[94] Therefore the Commission's recommended "radical reform" of DoD's acquisition system would be one that focuses on the creation of a single industrial base.[95]

The Commission also stressed the adaptation of commercial practices. It pointed out that "[t]he critical ingredient of adaptation to commercial practice is conversion from a regulation-based system to a market-based system."[96] This transition to a market-based systems will not lesson the government's obligation to obtain fair and reasonable prices on behalf of the taxpayers.[97]

Finally, the Carnegie Commission recognized that because the current defense acquisition system is both ingrained in practice and in law, the implementation of these recommendations will be difficult but not impossible.[98] Thus the Commission suggests that in order for such a dramatic change to be successful, there must be a strong commitment at all levels of government.[99]

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[93] *Id.* at 13.
[94] *Id.*
[95] *Id.* at 34, 36.
[96] *Id.* at 37.
[97] *Id.* at 37.
[98] *Id.* at 38.
[99] *Id.*

c. 1996 Defense Science Board Report

In 1996 the Defense Science Board (DSB)[100] prepared a report which recommended a new model, based on the "American free-market system," for developing and buying major weapon systems.[101] This model would rely on market forces and commercial practices which will result in a price-based contracting system with "faster time to market, lower prices, and higher performance."[102] The goals of this model are to develop and acquire major weapon systems faster, better and cheaper and to adjust DoD practices so that commercially oriented companies will compete for defense business. It is believed that this opening up of the defense market will offset the shrinking defense industrial base.[103]

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[100] The Defense Science Board is a Federal Advisory Committee which is established to provide independent advice to the Secretary of Defense. DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES (May 1996).

[101] DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES i (May 1996). *See generally* GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-93-15, *Weapons Acquisition: A Rare Opportunity for Lasting Change* (Dec. 1992) (provides a synopsis of major acquisition issues addressed by GAO over the past 15 years and recommends that making fundamental improvements in the process will require, in part, attacking the cultural aspects of the process); William B. Burnett & William E. Kovacic, *Reform of United States Weapons Acquisition Policy: Competition, Teaming Agreements, and Dual-Sourcing*, 6 YALE J. ON REG. 249 (1989) (provides an overview of United States weapons system acquisition policy); RICHARD M. NUNNO, CONGRESSIONAL RESEARCH SERVICE, DEFENSE R&D: AN OVERVIEW (Dec. 10, 1992) (provides an overview of research and development within DoD).

[102] DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES iv (May 1996). This model would use a price-based system versus the current cost-based system for contracting which was discussed previously. The "American free-market system" approach will improve the decision process regarding the best way to satisfy military needs, reduce barriers so that commercial firms can compete for defense business, streamline the execution of research and development which will reduce the time for fielding systems, and it will "provide improved safeguards for expenditures of public funds." *Id.* at i.

[103] *Id.* at 1.

The DSB projects that this new model will decrease the fielding of a major weapon system from the current 16-18 years to 7-10 years.[104] The DSB recognized that the current system's characteristics of high cost and inefficient oversight processes, isolates the defense industrial base from the commercial industrial base.[105] As a result, if DoD does not adjust its practices, it will end up relying upon an isolated defense industrial base, which, has been significantly reduced in size and in the number of firms that are able to compete. This puts DoD at risk of both not being able to respond timely and not having the state-of-art technology.[106]

The "key ingredients"[107] to the DSB's proposed acquisition model are the following. First, the DSB recommended a four-phase incremental approach for development which is called the Commercial-Style Research and Development Model. This model would serve as the standard approach for the development and acquisition of DoD systems and subsystems.[108] The first phase is the risk reduction phase. During this phase a "real military need is identified and is described by means of a very general mission need statement (what is to be

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[104] *Id.*
[105] *Id.* at i.
[106] *Id.*
[107] Ralph C. Nash, *Reforming the Weapon Systems Development Process: The Most Difficult Task*, 11 THE NASH & CIBINIC REP. ¶ 2 (Jan. 1997). Professor Nash coined this term in his review of the DSB's proposed model. The three key ingredients he identified for this proposal are an incremental approach to development, the use of flexible specifications and requirement of continuous competition. Professor Nash also commented that this report "stands as the only fully articulated vision of what an effective weapons system development process might look like." *Id.*
[108] DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES 11 (May 1996).

done)."[109] The second phase is the system demonstration phase. During this phase technical risks would be addressed through operational utility demonstrations, namely using prototypes in the field to see if the technology is going to meet the mission requirements.[110] During phase one and phase two DoD would use "fixed-price, 'flexible performance' contracting".[111]

The third phase is the build phase, where, a fixed-price contract would be awarded based upon a performance specification, with built in performance and delivery schedule incentives.[112] The final phase is the product improvement phase, which builds in incentives so that contractors will be encouraged to make quality and performance enhancing changes at a reduced price.[113]

Another key ingredient of the DSB's approach is having flexibility in the contracts. The DSB recommends fixed-priced contracts with flexible specifications. The contract would consist of well-defined limitations on price and time and flexible requirements on performance.[114] Another central feature to this concept of flexibility is the active participation and continuous assessment by the "consumers" (i.e. military users) of the development. This type involvement is critical to ensuring mission capability and in obtaining necessary value which may include tradeoffs and compromises. Therefore, "[i]t is critical

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[109] *Id.* at 12.
[110] *Id.* at 13.
[111] *Id.* at 12-13.
[112] *Id.* at 14.
[113] *Id.* at 15.
[114] *Id.* at 7. This is similar to the approach used by commercial companies. In commercial industry companies are competing amongst each to bring products to the market at prices that consumers will pay and with the value they want. Value can be subjective and therefore companies enlist consumers as a way to judge when value has been attained. *Id.*

that the ultimate users employ their skills and judgment of value as active participants in the entire development process."[115] Other main features of this type of contract include: requirements being stated as mission needs "not as product performance," the ability to continually negotiate and rapidly change the direction of development, the ability to terminate the development if it is determined that the value is unattainable, and the visibility by the Government program manager into all aspects of the development.[116]

The DSB's approach would use a team which would include the user (i.e. military member), the contractor, and the government program manager. Together, the team, must continually and collectively make assessments during the development process. The DSB states that "[t]he team should have budget control and be able to provide government insight into program price and performance (not detailed government auditing)."[117]

A third key ingredient in the DSB's approach is to maintain continuous competition throughout the development process.[118] Continuous competition as

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[115] *Id.*

[116] *Id.* at I-1. "This is very different from the 'fixed-price – total package procurement' concept which caused substantial problems in the past." *Id.* The DSB suggests that the difficulties with using fixed-priced performance contracts were caused by the early adoption of fixed performance requirements. Ralph C. Nash, *Reforming the Weapon Systems Development Process: The Most Difficult Task*, 11 THE NASH & CIBINIC REP. ¶ 2 (Jan. 1997).

[117] DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES 8 (May 1996). The DSB endorses the use of Integrated Product Teams (IPTs) as "an effective means of ensuring that all affected parties are involved in system development." These IPTs would include representatives from the users, contractors, and suppliers. The IPT will continually assess the value of the program at all phases. *Id.* at L-1.

[118] DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES 8 (May 1996). Professor Nash believes this could be the most difficult ingredient to achieve. Ralph C. Nash, *Reforming the Weapon Systems Development Process: The Most Difficult Task*, 11 THE NASH & CIBINIC REP. ¶ 2 (Jan. 1997). Achieving continuous effective competition throughout the

envisioned by the DSB is two-fold. First, the DSB envisions maintaining at least two competitors throughout the process. Second, if there is only one contractor at the end of the process, that system will continue to compete with other potential courses of action such as continued use of an existing system, upgrading a current system, acquiring a foreign system, or starting development on a newer system. Competition through alternatives is a commercial style procedure and a key to this model.[119]

This is a completely different form of decision-making for DoD. Professor Nash, in his analysis of the DSB's report, states that "[i]n the past, the effort has been made to differentiate systems meeting the same mission need rather than

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development process depends upon the ability of the participants to assess the value of the alternatives. Value assessments will replace the traditional approach used by DoD to decisionmaking. The DSB defines value as "the set of benefits available for a given price." This definition allows DoD access to commercial practices and expanded competition. Benefits, according to the DSB, can include "product features, time to market, reliability, safety, ease of maintenance, upgrade potential, reputation of the manufacturer, and other attributes." The use of judgment in assessing value is common practice in everyday life. Using judgment in the defense context will give flexibility to the DSB's proposed acquisition model. The buying decision would not be made until the benefits, schedule, and price are completely understood. DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES G-1 (May 1996). These value assessments are management judgments and are made before moving to the next phase. "Value assessments include quantity/quality trades, as well as comparisons across services and across programs." Simulation can provide a great way for the buyer to assess the best value between the other potential resources. The DSB recommends that certain considerations should be made to before reaching a decision on the value of a weapon system. They include priority of this mission-need at the projected price compared to other resources available; price and benefit of performing the same mission a different way; and "[p]rice and benefit of similar other equipment." *Id.* at G-2. Also, with this projected continuous competition, the DSB makes the application of the Cost Accounting Standards and cost principles unnecessary. Their application will discourage commercial companies from competing. *Id.* at K-1.

[119] DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES 8 (May 1996). Other commercial style procedures recommended by this model include "[c]hoosing between explicit best value alternative combinations of price and performance which are expressed as the ability to meet the mission need" and "[b]asing decision-making on informed judgment, rather than focused on procedure." *Id.*

to continuously compare them."[120] Further, he observes that "this is a radical change" which requires regular top-level review to ensure that the project will deliver a cost-effective solution and requires the willingness to terminate a project when there is no longer competition.[121] Finally, Professor Nash concludes that this model will motivate contractors to meet their performance and schedule goals. He states "[i]f they know their performance is continually being evaluated against other methods of meeting the mission need, they will have the maximum motivation to meet the performance goals."[122]

C. *Civil/Military Integration*

Adjusting DoD practices and reducing certain barriers has become a necessity for DoD so that it can access to the commercial sectors best products. DoD refers to this effort as civil/military industrial integration. It is one of DoD's top five priorities and a linchpin in DoD's "Revolution in Business Affairs."[123] DoD is seeking an expanded partnership with industry where research and development will create advanced technology that has a common application

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[120] Ralph C. Nash, *Reforming the Weapon Systems Development Process: The Most Difficult Task*, 11 THE NASH & CIBINIC REP. ¶ 2 (Jan. 1997).

[121] *Id.*

[122] *Id.* Past performance and contractor process maturity will be heavily emphasized when selecting sources to compete. DEFENSE SCIENCE BOARD, A STREAMLINED APPROACH TO WEAPONS SYSTEMS RESEARCH DEVELOPMENT AND ACQUISITION: THE APPLICATION OF COMMERCIAL PRACTICES 1 (May 1996).

[123] Under Secretary of Defense Acquisition and Technology The Honorable Jacques S. Gansler, Defense Modernization: Transforming The Way The Pentagon Does Business, Remarks at the National Contract Management Association (February 18, 1998) (transcript available at http://www.acq.osd.mil/ousda/speech/ncma.dinner.html, visited on March 21, 1998); *New DOD Acquisition*, 69 FED. CONT. REP. (BNA) No. 18, at 514 (May 4, 1998). The Director of Defense Procurement, in her 1998 agenda for DOD, set removing "barriers to participation in DOD procurement of traditionally non-DOD commercial suppliers." *Pentagon Procurement Director Outlines Agenda For 1998*, 40 GOV'T CONTRACTOR (Fed. Pubs. Inc.) 3, 4 (Feb. 11, 1998).

and will allow the manufacture of defense-unique items on the same lines with the commercial items.[124]

Civil/military integration[125] is based upon the notion that such integration will reduce DoD's costs by adopting commercial practices and enhancing competition. The defense industry's tremendous consolidation during the past

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[124] Statement to Congress by The Honorable Jacques S. Gansler Under Secretary of Defense Acquisition and Technology, Changes in Acquisition Procedures, March 18, 1998 (1998 WL 8993359) and Under Secretary of Defense Acquisition and Technology The Honorable Jacques S. Gansler, Defense Modernization: Transforming The Way The Pentagon Does Business, Remarks at the National Contract Management Association (February 18, 1998) (transcript available at http://www.acq.osd.mil/ousda/speech/ncma.dinner.html, visited on March 21, 1998). *See generally Gansler Memorandum on Single Process Initiative*, 69 FED. CONT. REP. (BNA) No. 23, at 659 (June 8, 1998) (memo discusses DoD's mechanism, the Single Process Initiative, to implement changes to current DoD contracts which will further its goal of civil/military integration); Department of Defense Single Process Initiative Quarterly Report (May 7, 1998) available at http://www.dcmc.hq.dla.mil/SPI/Index.htm, visited June 1998; DoD Acquisition Reform Senior Steering Group (1998) (currently developing DoD's plan for civil/military integration) available at http://www.acq.osd.mil/ar/arssg.htm, visited on June 30, 1998; GEN. ACCT. OFF., REPT. NO. GAO/PEMD-97-3, *Defense Industry: Trends in DOD Spending, Industrial Productivity, and Competition* 2 (Jan. 1997) (examines trends in the defense industry since the end of the Cold War); GEN. ACCT. OFF., REPT. NO. GAO/T-NSIAD-98-156, *Defense Industry Restructuring: Updated Cost and Savings Information* (Apr. 1998) (analyzes restructuring costs for seven business combinations, DoD estimates that it will pay 56 percent of the $1.5 billion in restructuring costs); GEN. ACCT. OFF., REPT. NO. GAO/T-NSIAD-97-141, *Defense Industry Restructuring: Cost and Savings Issues* (Apr. 15, 1997) (discusses DoD's decision and process to pay restructuring costs and the amount DoD has paid compared with the estimated savings). Dr. Gansler has written extensively on the subject of civilian/military integration. *See generally* JACQUES S. GANSLER, DEFENSE CONVERSION: TRANSFORMING THE ARSENAL OF DEMOCRACY (1995), JACQUES S. GANSLER, AFFORDING DEFENSE (1989), Jacques S. Gansler, The Defense Industry (1980). Jacques S. Gansler, *Let's Change the way the Pentagon does business*, HARV. BUS. REV., May-June 1977.

[125] This is defined as "eliminating the distinction between doing business with the government and other buyers." *Gansler Memorandum on Single Process Initiative*, 69 FED. CONT. REP. (BNA) No. 23, at 659 (June 8, 1998) The concept of civilian/military integration was proposed as a strategy to meet Congress' concerns of maintaining a viable defense industry while reducing the cost of defense equipment. DEBRA VAN OPSTAL, THE CENTER FOR STRATEGIC & INTERNATIONAL STUDIES, INTEGRATING COMMERCIAL AND MILITARY TECHNOLOGIES FOR NATIONAL STRENGTH: AN AGENDA FOR CHANGE ix (Mar. 1991). This study used the term "integration" to describe the solution to the above named concerns. It means that DoD "will rely far more on commercial products, process, and buying practices. Integration implies that many industries could employ the same technologies, personnel, administrative procedures, research, and production facilities for both commercial and military customers." *Id.* The study concludes that integration would result in the availability of a larger industrial base to meet defense requirements however, this base would not be dependent on DoD for its economic survival. This broader industrial base would in turn result in defense products that cost less and were of higher quality. *Id.* The study envisions "a world in which investments in technology and facilities are not artificially divided by

decade has left DoD with less contractors to compete for DoD programs.[126] It is also believed that civil/military integration will give DoD access to the technologies it needs to meet its national security mission.[127] Numerous reports,

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end user but rather combined synergistically to enhance both U.S. security and economic competitiveness." *Id.* at x.

[126] GEN. ACCT. OFF., REPT. NO: GAO/T-NSIAD-98-112, *Defense Industry Consolidation: Competitive Effects on Mergers and Acquisitions* (Mar. 4, 1998). In testimony before the U.S. Senate's Subcommittee on Acquisition and Technology, the GAO discussed defense industry consolidation, approaches to preserve competition in light of this consolidation, and the status of DoD's initiatives to monitor competition. The dramatic decline in DoD spending since 1985 has resulted in a defense industry that is more concentrated than any time in the past fifty years. *Id.* at 1. The GAO found that the "number of contractors declined in 10 of the 12 markets DOD identified as important to national security." *Id.* at 2. Specifically, "the number of contractors producing tactical missiles has dropped from 13 to 3," the number of contractors producing fixed-wing aircraft has dropped from 8 to 2, and the number of contractors producing expendable launch vehicles has dropped from 6 to 2. *Id.* at 2, 6. These results are not unexpected because DoD has encouraged this consolidation. The three large firms that have emerged are Boeing, Lockheed Martin, and Raytheon. Together they receive "they receive a substantial portion of what DOD spends annually to acquire its weapons and other products." *Id.* at 2. *See also* GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-98-141, *Defense Industry: Consolidation and Options for Preserving Competition* (Apr. 1998) (discusses approaches DoD can take to "preserve and monitor competition in the defense industry" including funding alternative technologies and devising "strategies to compete various approaches and missions"; suggests that recent consolidation could pose competition problems for DoD programs "unless DoD improves its ability to identify problem areas and devises alternative ways to maintain competition in defense acquisition programs); GEN. ACCT. OFF., REPT. NO. GAO/PEMD-97-3, *Defense Industry: Trends in DOD Spending, Industrial Productivity, and Competition* 1 (Jan. 1997) (discusses overall defense industry trends for productivity and competition and the relationship between these trends, where possible, in terms of defense spending); and Frederic M. Biddle, *Defense-Industry Consolidation May Not Be Over Yet*, Wall St. J., July 20, 1998, at B4 (discusses potential mergers among some of the smaller defense companies).

[127] The DoD Secretary of Defense stated that "[w]hile DoD drove technology developments in many areas for years, today the pace of commercial technology advancement in many sectors far exceeds Government sponsored technology efforts. Commercial technology advancements are outpacing DoD sponsored efforts in the same sectors that are key underlying technologies for military superiority (e.g. computers, software, integrated circuits, communications, and advanced material) . . . The design cycle for commercial technology is approximately 3-4 years, in DoD it is 8-10 years. Many DoD systems are technologically obsolescent at the time they are fielded." Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* 3 (Feb. 1994). Also, defense companies are experiencing a shortage of high-tech workers, specifically those with computer expertise. Professionals used to be attracted to defense companies because they were the drivers of the state-of-the-art technology. Today those professionals are found in commercial companies. This has hurt the ability of defense contractors to enter new business areas and could affect the costs and schedules of defense programs. Philip Finnegan & Mark Walsh, *High-Tech Worker Shortage Daunts U.S. Firms*, DEFENSE NEWS, Dec, 12-21, 1997, at 1, 20. Government aerospace sales have, with one exception, exceeded commercial aerospace sales in every year since 1908. However, in 1998 the commercial aerospace sales will account for 55% of all aerospace sales. This down turn in Government business will continue into the twenty-first

studies, and testimonies involving civil/military integration all recognize that DoD's unique contracting requirements and procedures, not technology, prevent this integration from occurring and often recommend the use of industry's best commercial practices.[128]

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century. *Commercial Aerospace Sales Will Top Government Sales Next Year, Group Predicts*, 68 FED. CONT. REP. (BNA) No. 22, at 644 (Dec. 29, 1997).

[128] *See generally* DEPARTMENT OF DEFENSE, DEFENSE SCIENCE BOARD, REPORT OF THE DEFENSE SCIENCE BOARD ACQUISITION WORKFORCE SUB-PANEL OF THE DEFENSE ACQUISITION REFORM TASK FORCE (Mar. 1998) (recommends improved integration with industry specifically recommending restructuring of DoD research and development organizations and workforce, expanding the use of price-based contracting to allow DoD access to technology firms that will not currently do business with DoD, and expanding outsourcing of sustainment activities to eliminate duplication with industry in product support); GEN. ACCT. OFF., REPT. NO. GAO/T-NSIAD-98-123, *Defense Acquisition: Improved Program Outcomes Are Possible* (Mar. 18, 1998) (focuses on improving weapons system acquisition process through applying best commercial practices); GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-98-87, *Best Practices: DOD Can Help Suppliers Contribute More to Weapon System Programs* (Mar. 1998) (identifies the best commercial practices for supplier relationships and compares those practices with DoD's practices); William Perry, *Defense Must Open the Commercial Door*, Los Angeles Times, Feb. 21, 1998 (former Secretary of Defense identifies false claims act as a barrier to civil/military integration and advocates modification so that it is consistent with commercial practices and says that DoD must rely on commercial companies for the top technologies and therefore "must give up its unique buying practices and employ best commercial practices"); Michael E. Heberling & Mary E. Kinsella, *Remaining Issues in Adopting Commercial Practices in Defense Acquisitions*, CONT. MGMT. (Feb. 1998) (discusses systematic, cultural, and product differences between government and commercial buying); GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-98-56, *Best Practices: Successful Application to Weapon Acquisitions Requires Changes in DOD's Environment* (Feb. 1998) (compares best commercial practices with DoD's practices for weapon system development and determines how the differences between the DoD practices and commercial practices affect product development); KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS 44 (RAND, 1997) (concluding that attracting companies that have not traditionally done business with the Department of the Army requires flexible contractual instruments); U.S. Congress, Office of Technology Assessment, *Assessing the Potential for Civil-Military Integration Selected Case Studies*, OTA-BP-ISS-158 (Washington, DC: U.S. Government Printing Office, Sept. 1995) (determines through case studies that defense needs can often be met by commercial technology, products and processes); GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-94-20, *Acquisition Requirements: Impact on Company Structures and Operations* (Apr. 1994) (discusses "how eight contractors integrate or separate their structures and operations to do business with the defense and commercial sectors" and discusses how these structures are caused or influenced by DoD acquisition requirements; report found that research and development operations were integrated in varying degrees; report found that DoD acquisition requirements caused seven of the eight contractors to maintain separate administrative structures for at least part of their defense work); DEBRA VAN OPSTAL, THE CENTER FOR STRATEGIC & INTERNATIONAL STUDIES, INTEGRATING CIVILIAN AND MILITARY TECHNOLOGIES: AN INDUSTRY SURVEY (Apr. 1993) (discusses why companies segregate their commercial and government business and the cost impact of that segregation); HAROLD BROWN, THE CENTER FOR STRATEGIC & INTERNATIONAL STUDIES, CRITICAL ISSUES IN DEFENSE CONVERSION (1994) (identifies six objectives for the defense conversion program and makes several recommendations including "spinning off

This integration will allow DoD to leverage the research and development being conducted in the private sector. In 1980 industry "displaced the Federal government as the leading source of R&D dollars."[129] As Federal dollars went down industry expenditure went up. The result is that U.S. industry is less dependent on Federal funding for research and development.[130] For example, Federal funds accounted for only 15 percent of the $151 billion in research and development performed in-house by industry in 1997.[131] "[A]lmost one-half of these Federal funds were provided to firms building aircraft and missiles."[132] Another study reported that private industry performs three quarters of all research and development in the United States.[133] Still another article reported

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defense investments into civilian application," "reforming the acquisition process," "providing regulatory relief for defense contractors," "reforming specifications and standards," and optimizing research and development investments); *Joint Hearings on S. 1587, Federal Acquisition Streamlining Act of 1993 Before the Committee on Governmental Affairs and the Committee on Armed Services United States* Senate, 103d Cong., 2d Sess. 147-155 (1994) (statement of Mr. Merritt Marquardt representing the Integrated Dual-Use Commercial Companies which discusses barriers caused by unique government requirements preventing commercial companies from participating in government procurements) available at http://www.idcc-coalition.com/page20.htm, visited on June 2, 1998; DEBRA VAN OPSTAL, THE CENTER FOR STRATEGIC & INTERNATIONAL STUDIES, INTEGRATING COMMERCIAL AND MILITARY TECHNOLOGIES FOR NATIONAL STRENGTH: AN AGENDA FOR CHANGE (Mar. 1991) (identifies barriers to and recommends a strategy for civilian/military integration).

[129] John E. Jankowski, *R&D: Foundation for Innovation*, RES. TECH. MGT., Mar.-Apr. 1998, at 14.

[130] *Id.* at 15. Also industrial research and development is mostly development. *Id.* at 16. "Whereas, development spending accounts for 62 percent of all U.S. R&D activities, it accounts for 75 percent of industry's performance. Basic research, which accounts for 15 percent of national R&D spending, accounts for just a 4-percent – and falling – share of industry's activities." *Id.*

[131] *Id.* This is down from the 33 percent share recorded in 1987, which was "the last year of any substantial growth in Federal R&D support to industry." *Id.*

[132] *Id.* at 15-16.

[133] Lewis Branscomb et al., *Investing in Innovation: Toward a Consensus Strategy for Federal Technology Policy* 7 (April 24, 1997) available on http://www.ksg.harvard.edu/iip/techproj/home.html visited on May 25, 1998.

that "92 percent of research-oriented commercial firms perform insignificant or no government research and development."[134]

The Industrial Research Institute (IRI) reported a positive outlook for industrial research and development for 1998.[135] Respondents[136] projected an overall increase of 4.8 percent in their research and development budgets for 1997. Thirty-one percent reported that they plan to increase their 1998 research and development budget by 5 percent. Thirty-nine percent report increases in research and development alliances and joint ventures which indicates industries "strong commitment to cooperative research."[137] "Such collaboration

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[134] Robert C. Spreng, *Increasing the Effectiveness of Government/Industry R&D Investment*, CONT. MGMT. 27 (May 1997). The article also found that only 79 of the top 900 research and development firms on *Business Week's* R&D Scoreboard are among DoD's top 500 research and development contractors. In addition have of these 79 are large defense contractors. There are thirty nine industry groups in the Business Week R&D Scoreboard. Twelve of those industries including computer communications, computers, data processing, semiconductors and electronics, invest over 5.3 percent of their sales in research and development. "Not one of the top three firms in any these industries appear on the DOD R&D awards list." *Id. See also* Integrated Commercial Companies web page, available at http://www.idcc-coalition.com/index.html, visited on June 2, 1998 (Integrated Dual-Use Commercial Companies is a coalition that was founded by commercial firms in 1991 to work on modifying "[f]ederal laws and regulations and practices regarding procurement, R&D and Intellectual Property to allow commercial companies to more effectively provide products, technologies and services to the Federal Government using Commercial Practices. Members have annual sales over $1 billion and less than 10 percent of those sales are from the Federal government. In 1995 the members combined invested $10.5 billion in research and development. 90 percent of the members "are leaders for their industry group in dollars invested in R&D.") *Id.*

[135] Robert Wood et al., Industrial Research Institute, *Industrial Research Institute's R&D Trends Forecast for 1998*, RES. TECH. MGMT., Jan.-Feb. 1998, at 16. *See also R&D: Declining Trend in Industrial Research Ended in 1996 Science Board Says*, 69 FED. CONT. REP. (BNA) No. 19, at 533 (May 11, 1998) (Investment by industry in basic and applied research has been on the rise since 1996. The influencing factors of this increase include "more intense global competition, record-high corporate profits for an extended period, and enhanced cash flows.")

[136] The IRI's 1998 forecast "is based on replies from 129 IRI member companies." The member companies represented are from a wide range of industries. Some of the industries include aerospace/transportation, chemical and advanced materials, communications, telecommunication networks and systems, and computers/electronics. Robert Wood et al., Industrial Research Institute, *Industrial Research Institute's R&D Trends Forecast for 1998*, RES. TECH. MGMT., Jan.-Feb. 1998, at 16.

[137] Robert Wood et al., Industrial Research Institute, *Industrial Research Institute's R&D Trends Forecast for 1998*, RES. TECH. MGMT., Jan.-Feb. 1998, at 16. *See also*, John E. Jankowski, *R&D: Foundation for Innovation*, RES. TECH. MGT., Mar.-Apr. 1998, at 17.

allows firms to leverage resources, reduce costs, and spread risks on R&D projects that otherwise might be unsupportable by a single firm."[138]

The Secretary of Defense stated that "DoD must have unimpeded access to commercial technologies more quickly than other countries if it is to maintain its technological superiority."[139] The structure and focus of industrial research and development is changing both in the United States and abroad. Industrial research and development today is characterized by increased spending by industry and the globalization of research and development investments. Industry has always played a dominant role in funding research and development in the United States. In 1997, $206 billion was spent on research and development within the United States.[140] Of that $206 billion, industry funded $133 billion or 65% of the research and development.[141] The Federal government funded $63 billion or 30% of the research and development.[142] Of that $206 billion, industry performed 74 percent ($151 billion) of the research and development while the Federal government performed 12 percent.[143]

The globalization of research and development is part of the reality of today's world economy. The globalization of research and development during the past decade is reflected by the fact that United States multinational

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[138] John E. Jankowski, *R&D: Foundation for Innovation*, RES. TECH. MGT., Mar.-Apr. 1998, at 17.
[139] Secretary of Defense William Perry Plan Provided to the House Armed Services Committee and Government Affairs Committee, *Mandate for Change* 5 (Feb. 1994).
[140] *Id.* at 14.
[141] *Id.*
[142] *Id.*
[143] *Id. See* STEVEN PAYSON AND JOHN E. JANKOWSKI, JR., NATIONAL SCIENCE FOUNDATION, NATIONAL PATTERNS OF R&D RESOURCES: 1996 (1996), and Steven Payson, National Science

companies "invest nearly $15 billion per year, roughly 10 percent of their total R&D spending, in R&D laboratories located in foreign nations."[144] Likewise foreign companies "account for more than 15 percent of all R&D conducted in the United States."[145] It is predicted that "[i]ndustry is likely to expand its involvement in domestic and foreign R&D partnerships as well as its usage of global R&D investment strategies."[146]

D. *Summary*

This discussion illustrates DoD's necessity for an acquisition strategy that will allow DoD to acquire research and development which will produce effective and efficient results. The DoD mission requires it and the DoD budget demands it.[147] The common themes which emerge from this discussion regarding the type

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Foundation, *R&D Exceeds Expectations Again, Growing Faster than the U.S. Economy during the Last Three Years*, DATA BRIEF, Nov. 5, 1997.

[144] LEWIS M. BRANSCOMB & JAMES H. KELLER, INVESTING IN INNOVATION: CREATING A RESEARCH AND INNOVATION POLICY THAT WORKS 26 (1998). *See also*, John E. Jankowski, *R&D: Foundation for Innovation*, RES. TECH. MGT., Mar.-Apr. 1998, at 18-20. A report by the Congressional Research Service describes how DoD can leverage its research and development investment by purchasing technology and products which are developed outside the government or its domestic contractors. The DoD has also funded research and development overseas. JOHN D. MOTEFF, CONGRESSIONAL REPORT SERVICE, LEVERAGING DoD'S R&D INVESTMENT: ACQUIRING EXTERNAL TECHNOLOGY, summary, CRS-1 (January 22, 1991).

[145] LEWIS M. BRANSCOMB & JAMES H. KELLER, INVESTING IN INNOVATION: CREATING A RESEARCH AND INNOVATION POLICY THAT WORKS (1998). These foreign companies make up a large part of the U.S. technology base in the areas of chemicals and pharmaceuticals. The fasted growing segment of U.S. research and development is "foreign direct investment (FDI) in R&D by foreign enterprises. *Id.* United States companies lead the world in global research and development, thus making the United States has the center for such activity. *Id.* at 26-27. "Over the past decade, overseas corporations have invested more than $10 billion in 400 research and development centers in the United States. Two thirds of this spending is concentrated in three sectors: chemicals, drugs, and electronics." *Id.* at 27. Foreign affiliates increased their research and development spending by seventy five percent between 1987 and 1990. *Id.* at 27.

[146] John E. Jankowski, *R&D: Foundation for Innovation*, RES. TECH. MGT., Mar.-Apr. 1998, at 20.

[147] *See also* Ralph C. Nash, *Reforming the Weapon Systems Development Process: The Most Difficult Task*, 11 THE NASH & CIBINIC REP. ¶ 2 (Jan. 1997). In discussing the DSB report Professor Nash observed that "there is a widespread recognition that the cost-based system of weapons systems developed was ineffective. It yielded – for the most part – technologically good weapons at a very high price using a shockingly long development cycle. It might have

of acquisition strategy DoD should use when acquiring research and development include: 1) Complete replacement of the old system; 2) Closer relationships with the customer (i.e. military users); 3) Adjustment of current acquisition regulations so that DoD obtains the necessary competition to acquire the state-of-the-art technology at a pace which will meet diverse threats; 4) Adjustment of current business practices to meet DoD's fiscal constraints; 5) Adjustment of current business practices so that research and development can be conducted in a flexible environment where tradeoffs (i.e. cost, schedule, performance) can be made rapidly; 6) Increased use of prototyping; 7) Adoption in general of the best commercial practices; and 8) Maintaining the public's trust.

Finally, such a strategy must also take into account the political realities of funding major research and development projects. It raises questions such as will decision-makers have the leadership to terminate a project after significant funds have been expended if it is not going to be the best solution for the warfighter? and is it really possible to maintain competition, through alternatives, all the way through a major weapon system?

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been practicable when DOD had lots of money, but it is not usable in an environment of limited resources." *Id.*

III. Other Transactions Within the Department of Defense

A. *Legislative History*

In 1989 Congress gave the Department of Defense a new authority to acquire research and development,[148] which is now referred to as other transaction authority. This section will discuss the legislative history of this authority within the Department of Defense.[149]

1. Defense Advanced Research Projects Agency

Congress initially gave the Department of Defense, through one of its defense agencies, the Defense Advanced Research Projects Agency, the authority to enter into other transactions.[150] An understanding of DARPA's history and its mission is necessary to fully appreciate why DARPA initially ended up with this new authority.

DARPA was created as the Advanced Research Projects Agency (ARPA) on February 7, 1958 in response to the former Soviet Union's launching of

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[148] *See* National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No. 101-189, § 251(a), 103 Stat. 1403 (Nov. 29, 1989) (current version at 10 U.S.C.A § 2371 (West Supp. 1998).

[149] The National Aeronautics and Space Administration has had a similar authority since 1958. National Aeronautics and Space Act of 1958, Pub. L. No. 85-568, 72 Stat. 426 (1958) (codified as amended at 42 U.S.C.A. § 2473(c)(5) (West Supp. 1998).

[150] National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No. 101-189, § 251(a), 103 Stat. 1403 (Nov. 29, 1989) (current version at 10 U.S.C. A. § 2371(a) (West Supp. 1998). The language stated "The Secretary of Defense, in carrying out advanced research projects through the Defense Advanced Research Projects Agency, may enter into cooperative agreements and other transactions with any person, any agency, or instrumentality of the United States, any unit of State or local government, and educational institution, and any other entity." *Id. See generally* Richard N. Kuyath, *The Untapped Potential of the Department of Defense's "Other Transaction" Authority*, 24 PUB. CONT. L. J. 521, 526-529 (1995) (discusses the legislative history of how DARPA obtained the other transaction authority stating that in 1988 the director of DARPA "concluded that DARPA needed additional flexibility in it approaches to supporting advanced R&D." "In October 1989 the Office of the Secretary of Defense (OSD) Study Team

Sputnik.[151] Despite the agency's name being changed back and forth between the Defense Advanced Research Projects Agency and the Advanced Research Projects Agency,[152] its mission has been to serve as DoD's "central research and development organization" whose primary responsibility is to "maintain U.S. technological superiority over potential adversaries."[153] DARPA's role within DoD can be characterized as a venture capitalist whose investment is not

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issued its report, which recommended that DoD prepare legislation that would give DARPA authority to enter into innovative contractual agreements.")

[151] *See* DoD Directive 5134.10 (Feb. 17, 1995) (currently establishes DARPA as a defense agency and spells out its responsibilities, functions, and relationships within the Department of Defense) and DARPA web site available at http://www.darpa.mil/arpa_darpa.htm, visited on May 28, 1998 (explains history of DARPA).

[152] In 1972 ARPA was renamed DARPA and was established as a separate defense agency and renamed Defense Advanced Research Projects Agency. http://www.darpa.mil/arpa_darpa.htm, visited on May 28, 1998. Defense was added to the agency's name "to reinforce its mission for supporting research and development (R&D) that met the Nation's defense needs." MICHAEL E. DAVEY, CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY: DARPA 1 (Jan. 15, 1993) The agency was known as DARPA between 1972-1992, as ARPA between 1993-1996, and as DARPA from 1996 to the present. http://www.darpa.mil/arpa_darpa.htm, visited on May 28, 1998. *See generally* MICHAEL E. DAVEY, CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY: DARPA (Jan. 15, 1993) (discusses the issue of broadening DARPA's mission and renaming it ARPA); *ARPA's Mission Won't Leave Defense Industry Behind, Denman says*, AEROSPACE DAILY, Apr. 9, 1993 (discusses intent of Congress to change name to highlight the agency's dual-use mission and agency's role in diversifying defense industry by providing funding for "risky research and development projects"); *Memo turns DARPA into ARPA*, GOV'T COMPUTER NEWS, Mar. 29, 1993 (discusses memorandum of understanding which establishes ARPA's new focus on closer ties between DoD research and development projects and those of the NSF, NASA, DOE, and Commerce and on supporting activities that will assist in the development of turning "federal technologies into commercial and military products" through the Technology Reinvestment Project); *SASC bill would rename DARPA, push dual-use approach*, DEFENSE DAILY, July 29, 1992 (discusses the Senate Armed Services Committee's bill to rename DARPA to ARPA and focus the agency's mission more towards dual-use technology); *Carnegie Commission Urges Transforming DARPA to Support Dual-Use Technologies*, FED. CONT. DAILY (BNA), Sept. 26, 1991 (discusses recommendation by Carnegie Commission to rename DARPA to the National Advanced Research Projects Agency (NARPA) and to refocus the agency "from defense-specific technologies under DARPA to dual-use technologies [because] 'in the fast-moving dual-use fields . . . the Department of Defense has gone from being a technological leader to a follower.'") In 1996 the agency was renamed DARPA. National Defense Authorization Act for Fiscal Year 1996, Pub. L. No. 104-106, § 908, 100 Stat. 406 (1996).

[153] DoD Directive 5134.10 (Feb. 17, 1995). As a defense agency, DARPA is run by a Director and under the control of the Under Secretary of Defense for Acquisition and Technology and the Director of Defense Research and Engineering. *Id.* The current director of DARPA is Mr. Fernando L. Fernandez who came from a small, applied research company he founded in 1994. News Release, Office of Assistant Secretary of Defense (Public Affairs), *Secretary Cohen Appoints DARPA Director*, May 11, 1998.

measured by return in dollars but in products and processes.[154] As the "crown jewel"[155] in defense research and development DARPA has been credited with giving the United States its computer strength.[156]

Described as "an office that doesn't function like the rest of the government," DARPA is characterized by the simplicity of its organization.[157] In part, DARPA's success is a result of its adherence to certain principles some of which include being small[158] and flexible, having a flat organizational structure, having "substantial autonomy and freedom from bureaucratic impediments," obtaining world-class scientists and engineers from industry, government and universities, and selecting program managers who are technically outstanding and entrepreneurial.[159]

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[154] DEPARTMENT OF DEFENSE, DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (undated).

[155] S. REP. NO. 352, 102d Cong., 2d Sess. 225 (1992) and NATIONAL ECONOMIC COUNCIL, NATIONAL SECURITY COUNSEL, OFFICE OF SCIENCE AND TECHNOLOGY POLICY, SECOND TO NONE: PRESERVING AMERICA'S MILITARY ADVANTAGE THROUGH DUAL-USE TECHNOLOGY 16 (Feb. 1995).

[156] MICHAEL E. DAVEY, CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY: DARPA 1 (Jan. 15, 1993) John Deutch, former provost of Massachusetts Institute of Technology, contended that "computer strength of the United States came out of DARPA." *Id.* DARPA invented and developed ARPANET which today is known as the internet. DARPA has made significant contributions to technologies involving supercomputers, semiconductors, artificial intelligence, robotics, and "smart" weapons. NATIONAL ECONOMIC COUNCIL, NATIONAL SECURITY COUNSEL, OFFICE OF SCIENCE AND TECHNOLOGY POLICY, SECOND TO NONE: PRESERVING AMERICA'S MILITARY ADVANTAGE THROUGH DUAL-USE TECHNOLOGY 16 (Feb. 1995) DARPA's financial backing of several computer scientists at Stanford University to set up private companies resulted in Sun Microsystems, MIPS Computer Systems, and Silicon Graphics. MURRAY WEIDENBAUM, SMALL WARS BIG DEFENSE 94 (1992).

[157] Andrew Jenks, *ARPA*, WASHINGTON TECH., Nov. 10, 1994.

[158] DARPA has about 240 personnel, 140 of which are technical. *DARPA Over the Years* available at http://www.darpa.mil/years.html, visited on May 28, 1998.

[159] *DARPA Over the Years* available at http://www.darpa.mil/years.html, visited on May 28, 1998. *See also Hearings on Department of Defense Authorization For Appropriations for Fiscal Year 1998 and The Future Years Defense Program Before the Committee on Armed Services,* 105th Cong., 1st Sess. 73-90 (1997) (statement of Larry Lynn, Director, Defense Advanced Research Projects Agency which discusses the three key ingredients that have sustained DARPA's ability to achieve "high-payoff goals").

DARPA's management is focused on "good stewardship of taxpayer funds" and accepts failure so long as the "payoff of success was high enough."[160] DARPA's flexibility also comes from its practice of obtaining personnel on a temporary basis. This practice allows DARPA to get in an out of research areas quickly and avoids the problem of sustaining staffs for certain projects. DARPA's unconventional government structure has given it the ability to act quickly and decisively, to adapt to rapidly changing environments, and to take advantage of opportunities in technology and processes.[161]

To carry out its mission, DARPA had traditionally used standard procurement contracts to acquire research and development from profit making firms.[162] However, it became apparent in the late 1980's that the standard government contracts and standard DoD grants were not adequate for DARPA to carry out its advanced research mission.[163]

For example, DARPA was missing out on opportunities to contract with some of the most innovative companies, including small start-ups and large commercial companies, that were developing some of the new and most promising technologies. Many of these companies did not have the desire or the

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[160] *DARPA Over the Years* available at http://www.darpa.mil/years.html, visited on May 28, 1998.

[161] *Id.*

[162] JOSEPH T. BOLOS, A REPORT ON THE USE OF 10 U.S.C. 2371 "OTHER TRANSACTION" AUTHORITY AND 10 U.S.C. 2371 SECTION 845 PROTOTYPE AUTHORITY IN THE DEPARTMENT OF DEFENSE 13 (Mar. 1997).

[163] *Id.* at 21. In 1989, the standard DoD grants were for basic research and were conducted by universities and non-profit organizations. Likewise the standard procurement contracts, prescribed in Part 16 of the Federal Acquisition Regulation, were for the acquisition of goods and services for the direct benefit of the DoD. *Id.* The majority of DARPA's work involved "advancing the state of the art, demonstrating technology, establishing industrial capabilities, and transitioning technology into actual use." *Id.*

Government systems required to perform a contract under the government procurement regulations. In addition, the standard government procurement contracts caused "awkward and inappropriate contractual relationships" when DARPA tried to use them to form a consortium to develop technologies. The ability to set up a multi-party agreement where consortium members were equal was needed.[164]

The director of DARPA concluded in 1988 "that DARPA needed additional flexibility in its approaches to support advanced R&D."[165] DARPA turned toward the National Aeronautics and Space Administration (NASA) for inspiration in obtaining a new statutory authority that would fill the void discussed above.[166] The National Aeronautics and Space Act of 1958 authorized the National Aeronautics and Space Administration to "enter into an perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in

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[164] *Id.* at 14. *See also* KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS (RAND, 1997) (analyzing twelve companies in the business of information technology that have not traditionally done business with the Army and finding that they would not do research with the Army under "the current contractual mechanisms but might do business under the mechanism of an other transaction).

[165] Richard N. Kuyath, *The Untapped Potential of the Department of Defense's "Other Transaction" Authority*, 24 PUB. CONT. L. J. 527 (1995). A team from the Office of the Secretary of Defense issued a report in October 1989 recommending DoD draft legislation which would give DARPA additional authority to enter into "innovative contractual agreements." *Id.* at 527-528. During this same time "a group of retired flag officers and other former government officials lobbied Congress for additional authority for DARPA to enter into innovative contractual agreements so that DARPA could contract with the best and the brightest companies in the research community." *Id.* at 528.

[166] *Hearing Before the House Comm. On Science on NASA Procurement In The Earth-Space Economy*, 104th Cong., 1st Sess. 27 (Nov. 8, 1995) (statement of Mr. Richard L. Dunn, General Counsel, Advanced Research Projects Agency).

the conduct of its work and on such terms as it may deem appropriate . . ."[167] to carry out its mission.[168]

DARPA was eventually given the authority to use other transaction instruments for research and prototype projects.[169] This authority has filled the void discussed above by giving DARPA the flexibility it needs to conduct its mission. DARPA initially obtained the authority to enter into other transactions to carry out research projects.[170] Specifically the statute stated that,

> [t]he Secretary of Defense, in carrying out advanced research projects through the Defense Advanced Research Projects Agency, may enter into cooperative agreements and *other transactions* with any person, any agency or instrumentality of the United States, any unit of State or local government, any educational institution, and any other entity.[171] (emphasis added)

This authority, often referred to as the "2371" authority after its statutory cite,[172] became permanent in 1991.[173] As amended, 10 U.S.C. § 2371 gives DARPA the authority to "enter into transactions (other than contracts, cooperative

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[167] 42 U.S.C.A. § 2473 (c)(5) (West Supp. 1998).
[168] National Aeronautics and Space Act of 1958, Pub. L. No. 85-568, 72 Stat. 426 (1958) (codified as amended at 42 U.S.C. § 2473(c)(5) (West Supp. 1998).
[169] *See* 10 U.S.C.A. § 2371 (West Supp. 1998).
[170] National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No. 101-189, § 251(a), 103 Stat. 1403 (Nov. 29, 1989) (current version at 10 U.S.C.A. § 2371) (West Supp. 1998)).
[171] National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No. 101-189, § 251(a)(1), 103 Stat. 1403 (Nov. 29, 1989) (current version at 10 U.S.C.A. § 2371) (West Supp. 1998)).
[172] This authority is codified at 10 U.S.C. § 2371. The National Defense Authorization Act for Fiscal Years 1990 and 1991 added 10 U.S.C. § 2371. Pub. L. No. 101-189, § 251(a)(1), 103 Stat. 1403 (Nov. 29, 1989).
[173] National Defense Authorization Act for Fiscal Years 1992 and 1993, Pub. L. No. 102-190, § 826(c), 105 Stat. 1442 (Dec. 5, 1991).

agreements, and grants) . . . in carrying out basic, applied, and advanced research projects."[174]

In 1993 DARPA was given the authority to use other transactions for prototype development projects.[175] Specifically the statute stated that DARPA could "under the authority of section 2371 of title 10 . . . carry out prototype projects that are directly relevant to weapons or weapons systems proposed to be acquired or developed by the Department of Defense."[176] This is often referred to as the "845" authority because it was authorized by § 845 of the 1994 National Defense Authorization Act.[177] This authority was extended[178] and currently expires September 30, 1999.[179] The United States Senate's version of the 1999 defense authorization bill extends this prototype authority to September 30, 2001.[180]

2. Military Departments

The military departments, which include the Department of the Air Force, Army and Navy, received the authority to enter in other transactions for research

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[174] Federal Acquisition Streamlining Act of 1994, Pub. L. No. 103-355, § 1301(b), 108 Stat. 3285 (Oct. 13, 1994).
[175] National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845, 107 Stat. 1547, 1721, 1722 (Nov. 30, 1993) (appearing as a note to 10 U.S.C. § 2371).
[176] National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845, 107 Stat. 1547, 1721 (Nov. 30, 1993) (appearing as a note to 10 U.S.C. § 2371).
[177] National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845, 107 Stat. 1547, 1721 (Nov. 30, 1993) (appearing as a note to 10 U.S.C. 2371).
[178] The authority originally expired on November 30, 1996. National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845, 107 Stat. 1547, 1722 (Nov. 30, 1993).
[179] National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804, 110 Stat. 2605 (Sept. 23, 1996).
[180] S. 2060, 105th Cong., 2d Sess. § 218 (1998). The Senate's version of this bill does not include an extension of the other transaction authority to production. *Id.*

in 1991.[181] However the military departments were not allowed to use this authority until 1993.[182] The military departments received the authority to use other transactions for prototype projects in 1996.[183]

3. Defense Agencies[184]

As discussed above DARPA and the military departments received the authority to enter into other transactions in 1989 and 1991 respectively. However, the defense agencies were not included in any of the statutory language. The use of the other transaction authority had to be delegated to the defense agencies.

The defense agencies were delegated the authority, from DoD's Under Secretary for Defense for Acquisition and Technology, to use other transactions to enter into prototype projects on December 14, 1996.[185] In February 1998 certain defense agencies were delegated the authority to enter into research

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[181] National Defense Authorization Act of Fiscal Years 1992 and 1993, Pub. L. No. 102-190, § 826, 105 Stat. 1442 (Dec. 5, 1991) (amending 10 U.S.C. § 2371).

[182] Department of Defense Appropriations Act, 1992, Pub. L. No. 102-172, § 8113A, 105 Stat. 1202 (Nov. 26, 1991). This section stated that DARPA was the only DoD activity that could enter into research other transactions during fiscal year 1992. *Id.*

[183] National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804, 110 Stat. 2605 (Sept. 23, 1996).

[184] Defense Agencies are authorized, by the Secretary of Defense pursuant to Title 10, United States Code, to perform certain support and service functions for entire Department. DoD's defense agencies include Ballistic Missile Defense Organization, Defense Advanced Research Projects Agency, Defense Commissary Agency, Defense Contract Audit Agency, Defense Finance Accounting Service, Defense Information Systems Agency, Defense Intelligence Agency, Defense Legal Services Agency, Defense Logistics Agency, Defense Security Assistance Agency, Defense Security Service, Defense Special Weapons Agency, National Imagery and Mapping Agency, National Security Agency, and the On-Site Inspection Agency. *See* DefenseLINK Web Site at http://www.defenselink.mil/pubs/almanac/def_agencies.html, visited on Aug. 20, 1998.

[185] Under Secretary of Defense for Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996) (on file with author). The memorandum was addressed to the Secretaries of the Military Departments and the Directors of Defense Agencies. *Id.*

other transactions.[186] The agencies that were delegated this authority include the Ballistic Missile Defense Organization, the Defense Information Systems Agency, the Defense Logistics Agency, the Defense Special Weapons Agency, the National Imagery and Mapping Agency and the National Security Agency.[187]

B. *Types of Other Transactions and Their Legal Status*

1. Definition and Legal Status

The definition of an other transaction impacts what government statutes and regulations apply to these instruments and what legal remedies are available to parties who enter into these instruments with the government. As discussed earlier one of the challenges DARPA faced in carrying out its mission was the cumbersome government procurement regulations.

The origin of the term, other transaction, comes from the former General Counsel of the National Aeronautics and Space Administration, Paul Dembling, who used it during the drafting of the National Aeronautics and Space Act of 1958."[188] To date there is no affirmative statutory definition for DoD's other transactions.[189] However, the original 1989 statute, in two sections, made reference to what an other transaction was not. First, the section of the statute

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[186] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Cooperative Agreements and Other Transactions for Research* (Feb. 10, 1998) (on file with author). This memorandum was addressed to Deputy Assistant Secretary of Defense (NCB)/CP/CB, Director, Ballistic Missile Defense Organization, Defense Information Systems Agency, Defense Logistics Agency, Defense Special Weapons Agency, National Imagery and Mapping Agency and the National Security Agency. *Id.*

[187] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Cooperative Agreements and Other Transactions for Research* (Feb. 10, 1998) (on file with author).

[188] Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998, at 2.

[189] *See* 10 U.S.C.A. § 2371 (West Supp. 1998).

proscribing the DoD's obligation stated that DoD use this authority "only when the use of *standard contracts* or grants is not feasible or appropriate."[190] (emphasis added) Second, the reporting requirements section[191] of the statute stated, "the Secretary of Defense shall submit to the Committees of Armed Services of the Senate and House of Representatives a report on all cooperative agreements and *other transactions (other than contracts and grants)* entered into under this section."[192] (emphasis added) The statute was amended in 1994 to read "enter into transactions (*other than* contracts, cooperative agreements, and grants)."[193] (emphasis added)

DARPA has followed this trend and defined other transactions in the negative stating that an other transaction is "not a standard procurement contract, grant or cooperative agreement."[194] DARPA has also interpreted other transactions to mean "a class of transactions outside the procurement and

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[190] National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No. 101-189, § 251(a)(1), 103 Stat. 1403 (Nov. 29, 1989). The current version does not include the word only but still refers to "standard contracts." 10 U.S.C.A. § 2371(e)(2) (West. Supp. 1998).

[191] National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No. 101-189, § 251(a)(1), 103 Stat. 1404 (Nov. 29, 1989) (current version at 10 U.S.C.A § 2371 (West Supp. 1998)) The statute requires DoD to report to submit an annual report on the use of this authority. 10 U.S.C.A. § 2371 (h) (West Supp. 1998).

[192] National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No: 101-189, § 251(a)(1), 103 Stat. 1404 (Nov. 29, 1989) (current version at 10 U.S.C. § 2371 (West Supp. 1998)).

[193] Federal Acquisition Streamlining Act of 1994, Pub. L. No. 103-355, § 1301(b), 108 Stat. 3285 (Oct. 13, 1994).

[194] Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997.

assistance categories as they were implemented by DoD in 1989 at the time of the statute's original enactment."[195]

It appears that DoD agrees that an other transaction is defined by what it is not, namely that it is not a procurement contract or an assistance agreement.[196] In its 1996 memorandum, delegating prototype authority to the defense agencies, DoD listed a set of statutes that "apply to procurement contracts, but that do not necessarily" apply to other transactions.[197] In its March 1998 guidance for research other transactions, DoD defined other transactions as "transactions other than contracts, cooperative agreements, and grants."[198] DoD also stated that

> [b]ecause [other transactions] include any type of instrument that isn't a contract, cooperative agreement, or grant, they include various types of instruments that could be used to carry out research projects, such as: (1) assistance instruments other than cooperative agreements or grants; and (2) instruments used for acquisition, other than procurement contracts.[199]

Further, an other transaction has been defined as "[a] legal instrument other than a standard contract, grant, or cooperative agreement for performing

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[195] *Hearing Before the House Comm. On Science on NASA Procurement In The Earth-Space Economy,* 104th Cong., 1st Sess. 32 (Nov. 8, 1995) (statement of Mr. Richard L. Dunn, General Counsel, Advanced Research Projects Agency).

[196] This paper will discuss in detail in Part III.B.2 the differences between research other transaction and prototype other transactions.

[197] Under Secretary of Defense for Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996) (on file with author).

[198] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* at 10 (Mar. 24, 1998) (on file with the author).

[199] *Id.* at 10. The guidance also states that research other transactions must comply with statutes and regulations that apply to nonprocurement instruments. *Id.* at 9

research and development projects."[200] The Comptroller General referred to an other transaction as a "nonprocurement instrument."[201] Finally, other transactions have been defined as "'other than' and 'in addition to' procurement contracts issued to acquire property or services for the direct benefit of the United States Government."[202]

Because an other transaction is something "other than" a standard procurement contract, there is an issue as to its legal status, namely can an other transaction be a legally binding contract. 10 U.S.C. § 2371 does not state that other transactions are not contracts.[203] Arguably an other transaction, which

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[200] NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS 3 (Nov. 1997) (the course manual was authored by DARPA employees).

[201] Energy Conversion Devices, Inc., Comp. Gen. B-260514, June 16, 1995, 95-2 CPD ¶ 121. *See generally* 31 U.S.C. § 6301 *et seq.* (specifies when DoD should use certain legal instruments and states that a procurement contract should be used when "the principal purpose of the instrument is to acquire . . . property or services for the direct benefit or use of the United States Government").

[202] Scott E. Pickens, *Resolving Disputes Relating to "Other Transactions" Instruments*, 4TH ANN. FED. PROCUREMENT INST., at 3 (Mar. 12-13, 1998). Mr. Pickens reaches this conclusion through an analysis of the following three statutes 10 U.S.C. § 2371, 10 U.S.C. § 2358, and 31 U.S.C. § 6303. *Id.* at 2-4. 10 U.S.C. §2371(a) states that this authority "is in addition to the authority provided in section 2358 of this title to use contracts, cooperative agreements, and grants" to carry out research projects. 10 U.S.C.A § 2371(a) (West Supp. 1998) Mr. Pickens argues that other transactions are "not just 'other than' contracts in general, but instead, are more narrowly, other than the type of contracts authorized in 10 U.S.C. §2358." Scott E. Pickens, *Resolving Disputes Relating to "Other Transactions" Instruments*, 4TH ANN. FED. PROCUREMENT INST., at 2 (Mar. 12-13, 1998). 31 U.S.C. § 6303, as referenced in 10 U.S.C. § 2358(b), defines the scope of the contracts authorized in 10 U.S.C. § 2358. 31 U.S.C. § 6303 states that "[a]n executive agency shall use a procurement contract . . . when (1) the principal purpose of the instrument it to acquire . . . property or services for the direct benefit or use of the United States or Government; or (2) that agency decides in a specific instance that the use of a procurement contract is appropriate." 31 U.S.C.A. § 6303 (West Supp. 1998). *See also* AMERICAN BAR ASSOCIATION, DRAFT AD HOC WORKING GROUP ANALYSIS ON THE APPLICABILITY OF CERTAIN PROCUREMENT-RELATED STATUTES TO UTILIZATION OF OTHER TRANSACTIONS AUTHORITY FOR PRODUCTION OF PROTOTYPES OF WEAPONS OR WEAPONS SYSTEMS 21-26 (Mar. 10, 1998) (on file with the author) (analysis concludes that other transactions are "other than" and "in addition to" procurement contracts).

[203] *See* AMERICAN BAR ASSOCIATION, DRAFT AD HOC WORKING GROUP ANALYSIS ON THE APPLICABILITY OF CERTAIN PROCUREMENT-RELATED STATUTES TO UTILIZATION OF OTHER TRANSACTIONS AUTHORITY FOR PRODUCTION OF PROTOTYPES OF WEAPONS OR WEAPONS SYSTEMS 26 (Mar. 10, 1998) (on file with the author) (analysis concludes that other transactions are "other than" and "in addition to" procurement contracts).

contains the requirements for a valid contract with the United States,[204] would be considered to be a legally binding contract with remedies available to the parties in the Court of Federal Claims.[205] This aspect of other transactions will be discussed further at the end of this chapter.

2. Types of Other Transactions and Guidance for Their Use

The three types of other transactions are research other transactions, prototype other transactions, and other types of arrangements where other transaction agreements could be used. The Department of Defense is required to report its use of other transactions to Congress at the end of each fiscal year.[206]

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[204] The requirements for a valid contract with the United States are the following. The party alleging a contract with the government must demonstrate first, that there was "a mutual intent to contract including an offer, an acceptance, and consideration passing between the parties" and second, that the government representative who entered into or ratified the agreement had the authority to bind the United States in the contract. Thermalon Indus. v. United States, 34 Fed. Cl. 411, 414 (1995).

[205] AMERICAN BAR ASSOCIATION, DRAFT AD HOC WORKING GROUP ANALYSIS ON THE APPLICABILITY OF CERTAIN PROCUREMENT-RELATED STATUTES TO UTILIZATION OF OTHER TRANSACTIONS AUTHORITY FOR PRODUCTION OF PROTOTYPES OF WEAPONS OR WEAPONS SYSTEMS 26 (Mar. 10, 1998) (analysis concludes that other transactions "are contracts in the legal sense, but not procurement contracts for the acquisition of goods or services for the direct benefit of the U.S. Government"). *See generally* Thermalon Indus. v. United States, 34 Fed. Cl. 411 (1995) (holding that a grant between the National Science Foundation and plaintiff was an enforceable contract even though it was not a "procurement contract"); Trauma Serv. Group v. United States, 104 F. 3d 1321 (Fed. Cir. 1997) (holding that the Court of Federal claims properly dismissed the plaintiff's case for failure to state a claim because the plaintiff did not show that its Memorandum of Agreements with the Army constituted either an express or implied-in-fact contract and stating the "[a]ny agreement can be a contract within the meaning of the Tucker Act, provided that it meets the requirements for a contract with the Government"); Trauma Serv. Group, Ltd. v. United States, 33 Fed. Cl. 426 (1995) (holding that a cooperative agreement, also referred to as a memorandum of agreement, between the Army and the plaintiff was not a contract because the provisions did not create a binding obligation); Total Med. Mgmt., Inc. v. United States, 104 F. 3d 1314 (Fed. Cir. 1997) (holding that Memorandum of Understandings between the Army and the plaintiff met the requirements of a government contract but the contract was void because it was in conflict with regulations); Quiman v. United States, 39 Fed. Cl. 171 (1997) (holding cooperative agreement did not constitute an enforceable contract).

[206] 10 U.S.C.A. § 2371(h) (West Supp. 1998).

a. Research Other Transactions

Research other transactions, also known as science and technology other transactions or technology investment agreements (TIAs),[207] are used by DoD to perform basic, applied or advanced research.[208] The DoD issued guidance in March 1998 on the use of research other transactions.[209] In its guidance DoD recognizes other transactions as an important mechanism to meet its mission to develop and transition superior technology which "enables affordable, decisive

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[207] In December 1997 DoD established a single class of assistance agreements called technology investment agreements (TIAs). Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Instruments for Stimulation or Support of Research & Attachment* (Dec. 2, 1997). Assistance is defined as the transfer of anything of value for a public purpose of support or stimulation authorized by a law of the United States. *Id.* at 10. Grants and cooperative agreements are the two most common types of assistance agreements used by federal agencies. Other transactions, because they include any type of instrument that is not a contract, cooperative agreement, or grant could be used to carry out research projects through an assistance instrument. DoD's guidance on TIAs applies only to other transactions for assistance and not other transaction instruments that are used for acquisition which are instruments that are other than procurement contracts. *Id.* at 10. TIAs may be used to carry out basic, applied, and advanced research projects. *Id.* at 2. A technology investment agreement may be either a cooperative agreement or a research other transaction. To the extent that the TIA is awarded under the authority of 10 U.S.C. § 2371(a), it must comply with applicable statutes and regulation for research other transactions. For example, it must comply with the reporting requirement in 10 U.S.C. § 2371(h) but it does not have to comply with requirements that only apply to grants and cooperative agreements. A technology investment agreement becomes a research other transaction under 10 U.S.C. § 2371 (a) when its patent-rights provision is less restrictive than the provisions under the Bayh-Dole statute (Chapter 18 of Title 35, U.S.C). *Id.* at 8-9.

[208] 10 U.S.C.A. § 2371(a) (West Supp. 1998).

[209] *See* Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* (Mar. 24, 1998) (on file with author). This memorandum supplemented the 1994 interim guidance for 10 U.S.C. § 2371. It creates a new class of agreements titled "technology investment agreements" (TIA). A TIA can be either a cooperative agreement or a research other transaction depending on the agreements patent rights provision. *Id. See generally* Director of Research and Engineering Anita K. Jones Memorandum, *Grants, Cooperative Agreements, and Other Transactions & Attachments* (Feb. 8, 1994) (established interim guidance for 10 U.S.C. § 2371); Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Instruments for Stimulation or Support of Research & Attachment* (Dec. 2, 1997) (established supplement to 1994 interim guidance for 10 U.S.C. §2371); ADVANCED RESEARCH PROJECTS AGENCY DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS (Feb. 1995) (established guidance for DARPA's use of research other transactions).

military capability."[210] DoD acknowledges that to perform its mission it must draw upon the "nation's best researchers and technology developers" and that the best performers are companies that serve in the commercial marketplace. DoD further acknowledges that its access to these companies has been limited by its business practices, namely the numerous Government-unique requirements.[211] Finally DoD's guidance states,

> [i]t is in the DoD's interest to integrate the Government and commercial sectors of the national technology and industrial base. By increasing access to for-profit firms that have not traditionally done business with the Government, technology and industrial base integration will help reduce DoD's life-cycle costs for weapon and support systems. It also will help increase technological sophistication, by allowing DoD to take advantage of technology in the commercial marketplace that often is more advanced than what is available in the defense-specific sector.[212]

DoD's policy is to facilitate participation of for-profit firms that have not traditionally done business with the Department of Defense as means to achieve its goal of integrating the technology and industrial bases.[213] To achieve this policy objective, DoD is "strongly encouraged" to use research other transactions to carry out research projects when it is "not appropriate or feasible to use standard grants or cooperative agreements."[214]

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[210] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* 1 (Mar. 24, 1998) (on file with author).
[211] *Id.*
[212] *Id.*
[213] *Id.* at 2.
[214] *Id.*

The four factors that an agreements officer[215] must consider before awarding a research other transaction include: the nature of the project, the type of recipient, the recipient's commitment to cost share, and the degree of involvement by the government program official.[216] First, the agreements officer must conclude that the principal purpose of the project is assistance, namely to stimulate or support research and that it is not to acquire goods and services[217] for the benefit of the DoD.[218] The agreements officer must also conclude that the "use of a standard contract, grant or cooperative agreement for [the research project] is not feasible or appropriate."[219] Finally, the agreements officer must

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[215] Agreements officers are individuals who have the authority to award a research other transaction. Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* 2 (Mar. 24, 1998) (on file with author).

[216] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* 3 (Mar. 24, 1998) (on file with author).

[217] *See* DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, ACQUISITION OF PROPERTY UNDER OTHER TRANSACTIONS FOR RESEARCH AND OTHER TRANSACTIONS FOR PROTOTYPES available at http://www.arpa.mil/cmo/pages/property.html, visited on Aug. 3, 1997 (provides guidance on how to deal with property under an other transaction).

[218] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* 3 (Mar. 24, 1998) (on file with author). *See* Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* 3 (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997 (stating that "[u]nder 10 U.S.C. §2371 'other transactions' can be used to stimulate and support research and development and for other purposes but may not be used for the principal purpose of acquiring goods and services for the direct benefit or use of the Federal Government").

[219] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* 2 (Mar. 24, 1998) (on file with author). *See* 10 U.S.C.A. § 2371(e)(2) (West Supp. 1998); National Defense Authorization Act for Fiscal Years 1990 and 1991, Pub. L. No. 101-189, § 251(a)(1), 103 Stat. 1403 (Nov. 29, 1989) (stated that use of authority could be used "*only* when the use of standard contracts or grants is not feasible or appropriate); National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 267(a), 110 Stat. 2467 (Sept. 23, 1996) (deleted that word *only*) (amending 10 U.S.C. § 2371(e)) and S. REP. NO. 267, 104th Cong., 2d Sess. 314 (1996) (stating that it was not Congress' intent that this requirement "unduly restrict the use of the other transactions instrument [and that] DARPA has properly interpreted Congress' intent that if the goal of a research project is to leverage the capabilities of firms that will not accept a standard grant, contract or cooperative agreement to conduct defense research, then it is not feasible or appropriate to use such instruments and the use of 'other transaction authority' is warranted).

conclude that the research project is relevant to DoD's policy objective to integrate the technology and industrial bases.[220]

Second, the agreements officer must consider who the recipient of the research other transaction is going to be. The DoD guidance states that a research other transaction is "appropriate only when a for-profit firm is to be involved in the performance of the research project, particularly a firm that has not traditionally done business with the Federal Government."[221] The guidance explains that a research other transaction may be awarded to a single recipient that is a for-profit firm or to a consortium[222] where at least one member is a for-profit firm.[223]

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[220] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* 3 (Mar. 24, 1998) (on file with author).

[221] *Id.* at 3.

[222] A consortium is where a group of entities come together to perform a research project. The team members may include a combination of traditional defense contractors, commercial firms, universities, State agencies and so on. Defense Advanced Research Projects Agency Memorandum, *Teaming Under 10 USC 2371* (undated), available at http://www.arpa.mil/cmo/pages/teaming.html, visited on Nov. 13, 1997. DARPA requires consortium members to enter into and submit their "Articles of Collaboration." This is a separate agreement from the other transaction which "sets out the relative rights and responsibilities of each Consortium participant." DARPA does have a sample but there is no prescribed format. At a minimum DARPA recommends that the Articles of Collaboration address "the management structure of the Consortium, the method of disbursing Government payments to Consortium members, the process for resolution of disputes between Consortium members, the possibility of termination of the Consortium, and the ownership of intellectual property created under the Agreement." ADVANCED RESEARCH PROJECTS AGENCY, DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS 3 (Feb. 1995). *See generally* Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998 (discusses Articles of Collaboration and issues to consider when entering into a consortium); MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" (NOV. 1995) (discusses findings from a survey conducted of consortium members who participated in an other transaction with DARPA).

[223] *See* Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 3 (Mar. 24, 1998) (on file with author).

Third, the agreements officer must consider the recipient's commitment to cost sharing.[224] The statute for research other transactions does not require cost share, however, it encourages a 50/50 cost share. Specifically, the statute says that "to the extent that the Secretary [of Defense] determines practicable, the funds provided by the Government under a . . . [research other transaction] . . . do not exceed the total amount provided by other parties to the . . . other transaction."[225] DoD has interpreted this provision to mean to the maximum extent practicable. DoD's guidance states that,

> [t]o the maximum extent practicable, the non-Federal parties carrying out the research project under a TIA are to provide at least half of the costs of the project from non-Federal resources that are available to them (unless there is specific authority to use other Federal resources for such cost sharing). Cost sharing to the maximum extent practicable is a statutory requirement for any TIA under the authority of 10 U.S.C. 2371; and is a matter of DoD policy for all other TIAs.[226]

The recipient's proposal should reflect a "strong commitment" and "self-interest" in the success of the project."[227] Commitment to meaningful cost sharing is a good indicator of the recipient's self-interest in the project's success. However, the guidance provides that an agreements officer may consider whether or not cost sharing is impracticable.[228] Congress' expectation of this cost share provision has been interpreted to mean that the recipient of the research other transaction "would retain intellectual property rights in the results

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[224] *See id.* at 4.
[225] 10 U.S.C.A § 2371(e)(1)(B) (1998).
[226] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 4 (Mar. 24, 1998) (on file with author).
[227] *Id.*

of the research project and would thereafter benefit by marketing the results commercially."[229]

The fourth factor the agreements officer must consider is the degree of involvement by government program officials. Using a research other transaction requires more involvement by government program officials because they will participate in the periodic reviews of the recipients research progress and will be substantially involved in revisions to the recipients' future plans for the effort. This requires a close cooperation between the agreements officer and program officials. It requires program officials to have a greater knowledge of, and greater participation in, business matters because traditional contracts or grants business matters have been the exclusive responsibility of the agreements officer.[230]

The DoD guidance states that competitive procedures should be used to the "maximum extent practicable" when awarding a research other transaction.[231] The two primary methods DoD uses to solicit a research other transaction are a

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[228] *Id.* If a particular program has a statutory requirements for cost sharing, an agreements officer may not waive the statutory requirement. *Id.*

[229] Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998, at 3. *See* S. REP. NO. 267, 104th Cong., 2d Sess. 314 (1996) (explains that the intent of the other transactions authority is "to maximize flexibility on intellectual property negotiations with private sector entities" and that other transactions are not subject to the Bayh-Dole Act); H. R. No. 499, 103d Cong., 2d Sess. 285 (1994) (discusses intellectual property rights and the Technology Reinvestment Project stating that the "Federal Government should avoid acquiring rights if that will impede commercialization" and that DARPA "can fully effectuate these policies because it has great flexibility to tailor patent and other intellectual property rights provisions under its 'other transactions' authority).

[230] *See* Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 4 (Mar. 24, 1998) (on file with author).

[231] *Id.*

broad agency announcement (BAA)[232] and a research announcement (RA).[233] The announcement or solicitation should indicate that other instruments, such as research other transactions, can be awarded pursuant to the announcement. DoD's objective by doing this is to encourage for-profit firms that have not traditionally done business with the government to submit a proposal for the project.[234]

Arguably DoD's guidance, through its treatment of research other transactions and cooperative agreements as one class of instruments, currently defined as Technology Investment Agreements, limits the potential parameters of research other transactions as contemplated by the statute. DoD's guidance is somewhat unclear with regard to the exact nature of other transactions. It implies that they include or are equivalent to assistance instruments and instruments for acquisition that are other than procurement contracts.[235] Thereby suggesting that, at best, some of the restrictions applicable to

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[232] A broad agency announcement (BAA) is a method, proscribed by the Federal Acquisition Regulation(FAR), by which the government acquires basic and applied research. FAR 35.016. DARPA uses BAAs if award could result in different instruments such as a standard, contract, grant or cooperative agreement. JOSEPH T. BOLOS, A REPORT ON THE USE OF 10 U.S.C. 2371 "OTHER TRANSACTION" AUTHORITY AND 10 U.S.C. 2371 SECTION 845 PROTOTYPE AUTHORITY IN THE DEPARTMENT OF DEFENSE 34 (Mar. 1997).

[233] A research announcement (RA) is used when it is anticipated that the award instrument will be an other transaction. A research announcement is somewhat more detailed that a BAA. It addresses issues such as intellectual property, cost sharing criteria, and consortium requirements. JOSEPH T. BOLOS, A REPORT ON THE USE OF 10 U.S.C. 2371 "OTHER TRANSACTION" AUTHORITY AND 10 U.S.C. 2371 SECTION 845 PROTOTYPE AUTHORITY IN THE DEPARTMENT OF DEFENSE 34 (Mar. 1997). DARPA uses "industry briefings" when possible to outline technological problems and to request submissions that will provide solutions (i.e. proposals). This allows DARPA to provide offerors with identical information. Defense Advanced Research Projects Agency web site available at http://www.darpa.mil/info/index.htm, visited on May 28, 1998.

[234] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 4 (Mar. 24, 1998) (on file with author).

[235] *Id.* at 10.

assistance instruments, namely the "public purpose" requirement, must be imposed upon research other transactions.

The provisions of § 2371 clearly distinguish between other transactions and traditional assistance instruments such as cooperative agreements.[236] Accordingly, the "public purpose"[237] restriction applied to cooperative agreements does not apply to research other transactions.[238] Therefore, it could be argued that research other transactions could be used to acquire basic, applied and advanced research that is for the direct benefit of the government when a standard contract, grant or cooperative agreement is not feasible or appropriate.[239] This is consistent with the earlier discussion that the spirit of this legislation was to unfetter DoD's ability to acquire research and

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[236] 10 U.S.C.A. § 2371(a) (West Supp. 1998).

[237] 31 U.S.C. § 6301 *et seq.* sets out when DoD should use certain legal instruments, namely a procurement contract, a grant agreement or a cooperative agreement. 10 U.S.C.A. § 2358(b)(1) (West Supp. 1998). Specifically, 31 U.S.C. § 6305 states that a cooperative agreement should be used as a legal instrument when "the principal purpose of the relationship [between the United States and the recipient] is to transfer a thing of value to . . . carry out a public purpose of support or stimulation . . . instead of acquiring . . . property or services for the direct benefit or use of the United States Government . . . " 31 U.S.C.A. § 6305(1) (West Supp. 1998). The statute does not define what constitutes a public purpose. 31 U.S.C.A. § 6301 *et seq.* (West Supp. 1998). However the GAO has stated that "[t]he decision as to the instrument [either a procurement contract or a cooperative agreement] to be selected turns on the primary purpose of the transaction. The key question is this: Is the principal purpose to serve the immediate needs of the federal government, or is it to provide assistance to a non-federal entity in serving a public purpose?" Report to Chair, Subcommittee on Compensation & Employee Benefits, Committee on Post Office & Civil Service, House of Representatives, Comp. Gen. Dec. B-257430, 1994 U.S. Comp. Gen. LEXIS 887 (Sept. 12, 1994) (citing Matter of: The Honorable Jack Brooks, House of Representatives, Comp. Gen. Dec. B-227084.5, Oct. 15, 1987, 67 CPD ¶ 13,15 (1987), *aff'd. on recon.*, Maritime Administration Award – Cooperative Agreement for Privatization of Computer Aided Operations Research Facility – Recons., Comp. Gen. B-227084.6, Dec. 19, 1988).

[238] 10 U.S.C.A. §2358(b)(1) (West Supp. 1998); 31 U.S.C.A. §6305(1) (West Supp. 1998); 10 U.S.C.A. § 2371 (West Supp. 1998).

[239] 10 U.S.C.A. § 2371(e)(2) (West Supp. 1998). *See also* JOHN CIBINIC, JR. AND RALPH C. NASH, JR., FORMATION OF GOVERNMENT CONTRACTS 19-20 (3rd ed., 1998) (discussing the scope of authority of other transactions).

development. This interpretation also provides DoD with a powerful tool to achieve its objectives within current technological realities.

b. Prototype Other Transactions

Prototype other transactions are used by DoD to "carry out prototype projects that are directly relevant to weapons or weapons systems proposed to be acquired or developed by the Department of Defense."[240] This authority is limited by two definitions, namely that of "prototype" and "weapons or weapon systems." DARPA interprets these terms broadly.[241]

First, the term prototype, as interpreted by DARPA, is not limited to "full-scale," "functional," "operational," or "pre-production" prototypes.[242] It includes projects "of lesser scope such as technology demonstrations, sub-system or

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[240] National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845(a), 107 Stat. 1721, 1722 (Nov. 30, 1993) (appearing as a note to 10 U.S.C. § 2371) as amended by National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804(a), 110 Stat. 2605 (Sept. 23, 1996) (appearing as a note to 10 U.S.C. § 2371).

[241] Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* 6 (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997. *See* Assistant Secretary of the Air Force (Acquisition) Arthur L. Money Memorandum, *Section 845 of Public Law 103-160, as Modified by Section 804 of Public Law 104-201, Authority to Carry Out Certain Prototype Projects* (May 6, 1997) (defines prototype as "an end product that reasonably evaluates the technical feasibility or operational military utility of a concept or system") available at http://www.afmc.wpafb.af.mil/HQ-AFMC/PK/pkt/otjump.htm, visited on July 25, 1998.

[242] Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* 7 (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997. *See generally* H.R. CONF. REP. NO. 724, 104th Cong., 2d. Sess. 768 (1996) (discusses the amendment to § 845 and specifically states it would be "to allow additional flexibility in the acquisition of prototype technologies and systems); H.R. REP. No. 563, 104th Cong., 2nd Sess. 325, 326 (1996) (discusses the amendment to § 845 and states that it would be "to allow additional flexibility in the acquisition of prototype technologies and systems").

component prototypes."[243] Prototype other transactions "may often involve the adaptation, testing, or integration of commercial items for military purposes."[244]

Second, the terms "weapons or weapons systems" are also not defined in the statute. DARPA concludes that weapons can be either offensive or defensive and that the statutory language includes "training, simulation, auxiliary and support equipment 'directly relevant' to 'weapons or weapons systems.'"[245] DARPA suggests that the United States Munitions List[246] might be a useful reference in determining whether or not something is a weapon.[247]

There are several differences between the statutory authority for a prototype other transaction and the statutory authority for a research other transaction. First, a prototype other transaction may be used for a project even if a standard contract, grant or cooperative agreement is feasible.[248] Second, cost sharing is not required for a prototype other transaction.[249] Third, in carrying out prototype other transactions DoD is required to use competitive procedures to "the maximum extent practicable."[250]

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[243] Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* 7 (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997.
[244] *Id.*
[245] *Id.*
[246] 22 C.F.R. § 121.1 (1997). The list includes such items as firearms, ammunition, artillery projectors, launch vehicles, guided missiles, military electronics, and toxicological agents and equipment and radiological equipment. *Id.*
[247] Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* 7 (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997.
[248] National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845(b), 107 Stat. 1722 (Nov. 30, 1993) as amended by National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804(c), 110 Stat. 2605 (Sept. 23, 1996).
[249] *Id.*
[250] *Id.*

DoD issued guidance on the use of prototype other transactions in a December 1996 memorandum.[251] The memorandum lists nineteen statutes that do "not necessarily" apply to other transactions.[252] DoD provides the list "for guidance only" and states that it "is not intended to be definitive."[253] Each statute must be analyzed for each other transaction to determine whether it does or does not apply to that particular other transaction.[254]

The memorandum requires DoD activities, when using a prototype other transaction, to submit a transition strategy for follow-on contracts to the Under Secretary of Defense for Acquisition and Technology within 30 days prior to award.[255] DoD activities are also required to submit a report to the Under Secretary of Defense Acquisition and Technology which complies with the statutory requirements in 10 U.S.C. 2371(h).[256]

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[251] Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996). *See also* Director of Defense Procurement Eleanor R. Spector Memorandum, *Assignment of Instrument Identification Numbers and Collection of Common Data Elements for Section 845 Other Transactions (Report Control Symbol DD-A&T (AR) 2037)* (Oct. 16, 1997) (provides guidance for the procurement instrument identification number for prototype other transactions and requires DoD activities to collect and report common data elements for prototype other transactions in a central database) available at http://www.abm.rda.hq.navy/mil/otreq1a.html, visited on Jan. 18, 1998.

[252] Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996). The statutes listed include 10 U.S.C. §§ 2310-2305; 41 U.S.C. § 601 *et seq.*; 31 U.S.C. § 3551 *et seq.*; 50 U.S.C. §§ 1431-1435; 10 U.S.C. § 2207; 10 U.S.C. § 2306; 10 U.S.C. § 2313; 10 U.S.C. § 2353; 10 U.S.C. § 2354; 10 U.S.C. § 2393; 10 U.S.C. § 2403; 10 U.S.C. § 2408; 10 U.S.C. § 2409; 10 U.S.C. § 1352; 41 U.S.C. §§ 51-58; 41 U.S.C. § 423; 41 U.S.C. § 351 *et seq.*; 41 U.S.C. §§ 701-707; 41 U.S.C. § 10a-d). *Id.*

[253] *Id.*

[254] *Id.*

[255] *Id.* "The transition strategy must also address how the DoDD 5000.1 and DoD 5000.2R requirements will be applied to the acquisition program." *Id.*

[256] *Id.* A format for the annual reporting requirements is attached to the memorandum. *Id.*

c. Other Types of Other Transactions

There are four other types of arrangements where DoD has involved some aspect of an other transaction type agreement.[257] The first type of arrangement is a bailment agreement. This type of agreement could be used for borrowing or lending equipment where the test and research results are shared. The second type is a parallel or coordinated research agreement. This type of agreement "would involve sponsoring a research project that is related to one or more research projects funded by others and involving an arrangement to share results or to coordinate the research so as to enhance the end result of the project."[258] The third type is a joint funding arrangement where parties would finance a third party to conduct research. The last type is a reimbursable arrangement where the DoD would provide a service, such as transportation on an experimental space launch, air, or undersea vehicle, and the user would provide "one or more of its own experiments to be conducted during a test mission."[259] The amount of reimbursement to DoD would depend upon whether or not the user's experimental data is shared with DoD.[260] In addition to these four types, there are numerous other possibilities for the use of this authority.

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[257] *Hearing Before the House Comm. On Science on NASA Procurement In The Earth-Space Economy,* 104th Cong., 1st Sess. 33 (Nov. 8, 1995) (statement of Mr. Richard L. Dunn, General Counsel, Advanced Research Projects Agency). *See* ADVANCED RESEARCH PROJECTS AGENCY, DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS 2 (Feb. 1995).

[258] *Hearing Before the House Comm. On Science on NASA Procurement In The Earth-Space Economy,* 104th Cong., 1st Sess. 33 (Nov. 8, 1995) (statement of Mr. Richard L. Dunn, General Counsel, Advanced Research Projects Agency).

[259] *Id.* at 33.

[260] *Id.* at 33.

C. *Application of Federal Procurement Statutes and Regulations*

As discussed above other transactions are something other than standard procurement contracts,[261] grants, or cooperative agreements and are arguably not subject to government procurement statutes or regulations.[262] Although there is no uniform guidance on what statutes do and do not apply to other

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[261] The Office of Federal Procurement Policy Act defines the term procurement to include "all stages of the process of acquiring property or services, beginning with the process for determining a need for property or services and ending with contract completion and closeout." 41 U.S.C.A. § 403(2) (West Supp. 1998). The term procurement is not defined by any other statute or regulation. *See* 28 U.S.C. §1346(a)(2), §1491(a) (Tucker Act does not define procurement); 41 U.S.C. 601 *et seq.* (Contract Disputes Act does not define procurement); 31 U.S.C. § 6303 (does not define procurement but states that a procurement contract should be used when "the principal purpose of the instrument is to acquire . . . property or services for the direct benefit or use of the United States Government"); 48 C.F.R. §§ 1-51 (1997) (Federal Acquisition Regulation does not define procurement). However the term procurement is used in various sections of the United States Codes to distinguish those sections from other topics such as research and development. *See generally* 10 U.S.C. §2351-2374 (titled research and development);10 U.S.C. §2302a-2331 (titled procurement generally); 41 U.S.C. §251-266 (titled procurement provisions); 41 U.S.C. §403-434 (office of federal procurement policy); AMERICAN BAR ASSOCIATION, DRAFT AD HOC WORKING GROUP ANALYSIS ON THE APPLICABILITY OF CERTAIN PROCUREMENT-RELATED STATUTES TO UTILIZATION OF OTHER TRANSACTIONS AUTHORITY FOR PRODUCTION OF PROTOTYPES OF WEAPONS OR WEAPONS SYSTEMS 21-26 (Mar. 10, 1998) (on file with the author) (analysis concludes that other transactions are "other than" and "in addition to" procurement contracts) Therefore, for the purpose of this thesis, a standard procurement contract, is contract that is governed by the Federal Acquisition Regulation and other statutes that reference the term procurement. *See generally* AMERICAN BAR ASSOCIATION, SECTION OF PUBLIC CONTRACT LAW BID PROTEST COMMITTEE, POST-AWARD BID PROTESTS AT THE U.S. COURT OF FEDERAL CLAIMS (Nov. 1997) (discusses the meaning of the term procurement and analyzes case law involving the term procurement).

[262] *See* Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996) (lists nineteen statutes that may not apply to prototype other transactions); Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 4 (Mar. 24, 1998) (stating that research other transactions are not subject to requirements that apply to grants and cooperative agreements); JOHN CIBINIC, JR. AND RALPH C. NASH, JR., FORMATION OF GOVERNMENT CONTRACTS 20 (3rd ed., 1998) (stating that government agencies using their other transaction authority do not have to comply with procurement statutes, the federal acquisition regulation or rules applying to grants or cooperative agreements but must comply with other statutes that apply generally to contractual transactions). *Compare with* Trauma Serv. Group, Ltd. v. United States, 33 Fed. Cl. 426 (1995) (stating that grants and cooperative agreements are not subject to procurement statutes or regulations, such as the Competition in Contracting Act (41 US.C. §§ 251 et seq.), the Contract Disputes Act (41 U.S.C. §§ 601 et seq.), and the Federal Acquisition Regulation (48 C.F.R. § 1)).

transactions,[263] this does not mean that other transactions are not subject to any laws and regulations.[264] DoD's guidance on prototype and research other transactions indicate that other transactions are subject only to statutes and regulations which govern nonprocurement instruments.[265] DoD's guidance also suggests that each statute must be analyzed to determine its applicability.[266]

DARPA has consistently interpreted other transactions as "a class of transactions outside the procurement and assistance categories" and therefore as not being subject to the Armed Services Procurement Act, the Federal Acquisition Regulation, the Defense Federal Acquisition Regulation Supplement, the statutes codified at Title 41 of the United States Code, and to the laws and

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[263] JOHN CIBINIC, JR. AND RALPH C. NASH, JR., FORMATION OF GOVERNMENT CONTRACTS 20 (3rd ed., 1998).

[264] Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996). DARPA points out that laws including Title VI of the Civil Rights Act (42 U.S.C. § 2000(d)), the Trade Secrets Act (18 U.S.C. §1905), and the Conflict of Interest Statute (18 U.S.C. 208) apply to other transactions. Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* 8 (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997.

[265] *See* Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996) (lists nineteen statutes that may not apply to prototype other transactions and refers to other prototype other transactions as "alternatives to contracts") and Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 4 (Mar. 24, 1998) (stating that research other transactions must comply with the requirements for nonprocurement instruments such as "statutes that apply broadly to DoD appropriations" and the "Governmentwide rules on nonprocurement debarment and suspension, drug-free workplace, and lobbying that are codified at 32 CFR Parts 25 and 28).

[266] Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996). One of the six recommendations adopted by the American Bar Association Section of Public Contract Law regarding DoD's use of other transactions is that DoD "should analyze and report to Congress which statutes, if any, should apply to other transactions and whether any changes in these statutes are warranted in light of the use of other transactions." American Bar Association Section of Public Contract Law Scott E. Pickens Memorandum & Attachment (Request for Blanket Authority) (Feb. 20, 1998). *See Other Transactions, ABA Group Calls for Limits on DOD Use of Other Transactions for Prototypes*, 68 FED. CONT. REP. (BNA) No. 18, at 543-544 (Nov. 17, 1997) (summarizes ABA's six recommendations regarding DoD's use of other transactions).

regulations governing grants or cooperative agreements.[267] DARPA argues that Congress' re-enactment[268] of other transaction authority is a ratification of DARPA's use and interpretation of this authority.[269]

The following discussion regarding protests and disputes, exemplifies the debate over what statutes and regulations apply to other transactions.[270] First, the DoD suggests in its 1996 memorandum that the procurement protest system[271] does not apply to other transactions.[272] Pursuant to the Competition in

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[267] *Hearing Before the House Comm. On Science on NASA Procurement In The Earth-Space Economy,* 104th Cong., 1st Sess. 32 (Nov. 8, 1995) (statement of Mr. Richard L. Dunn, General Counsel, Advanced Research Projects Agency) and Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* 8 (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997.

[268] *See* National Defense Authorization Act of Fiscal Years 1992 and 1993, Pub. L. No. 102-190, § 826 (c), 105 Stat. 1442 (Dec. 5, 1991) (making the 10 U.S.C. § 2371 authority permanent) and National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845, 107 Stat. 1722 (Nov. 30, 1993) as amended by National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804, 110 Stat. 2605 (Sept. 23, 1996) (extended the prototype other transaction authority).

[269] *Hearing Before the House Comm. On Science on NASA Procurement In The Earth-Space Economy,* 104th Cong., 1st Sess. 31,32 (Nov. 8, 1995) (statement of Mr. Richard L. Dunn, General Counsel, Advanced Research Projects Agency). DARPA cites two cases, *Tennessee Valley Authority v. Kinzer* and *United States v. Two Tracts of Land,* to support its position that Congress has ratified its interpretation of DoD's other transaction authority. *Id. See* Tenn. Valley Authority v. Kinzer, 142 F. 2d 833, 837 (6th Cir. 1944); United States v. Two Tracts of Land, 456 F.2d 264 (6th Cir. 1972) *cert. den.*, 409 U.S. 887 (1972). *See also* Richard N. Kuyath, *The Untapped Potential of the Department of Defense's "Other Transaction" Authority*, 24 PUB. CONT. L. J. 521, 526-529 (1995) (arguing that DARPA's position is also supported by the lack of legislative history to changes made to 10 U.S.C. §2371 by the Federal Acquisition Streamlining Act of 1994) and S. REP. NO. 267, 104th Cong., 2d Sess., at 314 (1996) (supporting DARPA's interpretation on when to use an other transaction).

[270] *See also* AMERICAN BAR ASSOCIATION, DRAFT AD HOC WORKING GROUP ANALYSIS ON THE APPLICABILITY OF CERTAIN PROCUREMENT-RELATED STATUTES TO UTILIZATION OF OTHER TRANSACTIONS AUTHORITY FOR PRODUCTION OF PROTOTYPES OF WEAPONS OR WEAPONS SYSTEMS (Mar. 10, 1998) (analyzes the applicability of twenty seven statutes to other transactions including the nineteen statues listed by DoD in its December 1996 memorandum on prototype other transactions).

[271] 31 U.S.C.A §§ 3551 *et seq.* (West Supp. 1998); 4 C.F.R. § 21 (1997).

[272] Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996).

Contracting Act of 1984 (CICA)[273] and the GAO's bid protest regulations,[274] the GAO reviews alleged violations of procurement statutes or regulations by federal agencies in the award or proposed award of a government procurement contract.[275]

The GAO's forum is not available for unsuccessful offerors who bid on an other transaction and want to challenge the merits of the agency's award. The GAO will only consider whether or not a procurement contract should be used instead of a research other transaction.[276] Relying on the Federal Grant and Cooperative Agreement Act (FGCA),[277] which requires that a procurement contract be used if the principle purpose is to acquire property or services for the direct benefit of the government,[278] the GAO concluded that the principle purpose of a research other transaction was to stimulate and support research.[279] Profs. Cibinic and Nash argue that this case "indicates that the Comptroller General might rule that the other-transactions authority could not be

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[273] *See* Pub. L. No. 98-369, 10 U.S.C.A. §§ 2301-2305 (West Supp. 1998). The 1996 DoD guidance lists CICA as a statute that is not necessarily applicable to other transactions. Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996).

[274] 4 C.F.R. § 21 (1997).

[275] 31 U.S.C.A. §§ 3551 *et seq.* (West Supp. 1998); 4 C.F.R. § 21 (1997) and GEN. ACCT. OFF. NO. GAO/OGC-96-24, *Bid Protests at GAO: A Descriptive Guide* 7 (6th ed., 1996).

[276] Energy Conversion Devices, Inc., Comp. Gen. B-260514, June 16, 1995, 95-2 CPD ¶ 121, at 8. *Compare with* Sprint Comm. Co., Comp. Gen. B-256586, 94-1 CPD ¶ 300 (holding that GAO will only consider whether or not a procurement contract should have been used instead of a cooperative agreement).

[277] 31 U.S.C.A. §§ 6303, 6305 (West Supp. 1998).

[278] 31 U.S.C.A. § 6303 (West Supp. 1998).

[279] Energy Conversion Devices, Inc., Comp. Gen. B-260514, June 16, 1995, 95-2 CPD ¶ 121, at 3-8.

properly used if the agency was merely procuring services. Such a ruling would appear to be in conflict with the express statutory provisions."[280]

Another outstanding issue is whether or not the GAO would decide a protest involving a prototype other transaction.[281] Arguably, the GAO would lack the jurisdiction to hear such a protest because a prototype other transaction is not a procurement contract. Potentially, the GAO could not even review whether or not a procurement contract should have been used instead of a prototype other transaction because a prototype other transaction may be used even if a standard procurement contract is feasible.[282]

Other forums that are arguably available for unsuccessful offerors to protest the award of an other transaction include the U.S. Court of Federal Claims and the U.S. District Courts.[283] Their jurisdiction includes rendering,

> [a] judgment on an action by an interested party objecting to a solicitation by a Federal agency for bids or proposals for a proposed *contract* or to a proposed award or the award of a contract or any alleged violation of a statute or regulation in connection with a *procurement* or proposed *procurement*.[284] (emphasis added)

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[280] JOHN CIBINIC, JR. AND RALPH C. NASH, JR., FORMATION OF GOVERNMENT CONTRACTS 20 (3rd ed., 1998).

[281] *See* National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845(a), 107 Stat. 1721, 1722 (Nov. 30, 1993) as amended by National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804(a), 110 Stat. 2605 (Sept. 23, 1996).

[282] National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845(a), 107 Stat. 1721, 1722 (Nov. 30, 1993) as amended by National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804(a), 110 Stat. 2605 (Sept. 23, 1996). *See generally* AMERICAN BAR ASSOCIATION, DRAFT AD HOC WORKING GROUP ANALYSIS ON THE APPLICABILITY OF CERTAIN PROCUREMENT-RELATED STATUTES TO UTILIZATION OF OTHER TRANSACTIONS AUTHORITY FOR PRODUCTION OF PROTOTYPES OF WEAPONS OR WEAPONS SYSTEMS A-9 (Mar. 10, 1998) (argues that prototype other transactions are *de facto* exempted from the FGCA requirement of when a procurement contract must be used).

[283] 28 U.S.C.A. § 1491(b)(1) (West Supp. 1998); Administrative Dispute Resolution Act of 1996, Pub. L. No. 104-320, § 12, 110 Stat. 3874 (1996) (amending 28 U.S.C. § 1491(b)(1)).

[284] 28 U.S.C.A. § 1491(b)(1) (West Supp. 1998) The Court of Federal Claims has issued a general order which describes general practices to be followed in pre- and post-award bid

No protest involving an other transaction has been brought in either of these forums. The issue is how these courts would interpret the terms "contract" and "procurement," namely whether the courts would find that they have jurisdiction over an other transaction protest in light of the fact that the statute uses the term procurement in, arguably, referencing the contract. Because an other transaction is not a procurement contract, the courts might find that they do not have jurisdiction to hear a bid protest involving such an agreement. Congress could remedy this problem by clarifying the statute.

In addition to their bid protest jurisdiction, the U.S. District Courts also have jurisdiction under the Administrative Procedure Act (APA)[285] to review agency actions.[286] Suit may be brought by "[a] person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency within the meaning of a relevant statute."[287] The APA waives the sovereign immunity of the United States only for "[a]n action in a court of the United States seeking relief other than money damages."[288] Also, "the APA provides that nonstatutory APA review of an agency decision is available only 'if there is no other adequate remedy in a court.'"[289] The person seeking relief must establish that it will suffer

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protests filed pursuant to 28 U.S.C. § 1491(b). United States Court of Federal Claims, General Order No. 38 (May 7, 1998) available at http://www.ogc.doc.gov/fedcl/docs/order38.htm, visited on May 22, 1998.

[285] 5 U.S.C.A. § 702 (West Supp. 1998).

[286] *See generally* Nat'l Center for Manufacturing Sciences v. United States, 114 F.3d 196 (Fed. Cir. 1997) (discusses jurisdiction of Administrative Procedure Act).

[287] 5 U.S.C.A. § 702 (West Supp. 1998).

[281] *Id.*

[289] Nat'l Center for Manufacturing Sciences v. United States, 114 F.3d 196, 199 (Fed. Cir. 1997) (citing 5 U.S.C. § 704).

an injury "in fact" because of the agency action and that it is within the "zone of interests" protected by the statute.[290] One interpretation of the APA would allow an unsuccessful offeror to request a district court to review an award decision of an other transaction based on a protection in the authority's statute.[291]

Finally, DARPA agrees that a protest procedure for other transactions should be developed and that a protest forum, such as an "agency-controlled alternative dispute resolution process," should be available for unsuccessful offerors.[292]

Disputes is the second area which exemplifies the debate over what laws apply to other transactions.[293] In its 1996 guidance, DoD suggests that the Contract Disputes Act (CDA)[294] does not necessarily apply to other

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[290] Chem Serv., Inc. v. United States, 12 F.3d 1256, 1261,1262 (3d Cir. 1993).

[291] *See generally* Chem Serv., Inc. v. United States, 12 F.3d 1256 (3d Cir. 1993) (holding that plaintiff had standing in the district court under the APA to challenge the award of a cooperative research and development agreement in order to determine whether or not a procurement contract should have been used instead) and John Cibinic, *Cooperative Agreements: Many Things to Many People*, 9 THE NASH & CIBINIC REP. ¶ 39 (July 1995) (analyzes jurisdiction of district courts under the APA to hear challenges involving the award of a cooperative agreement and suggests that if there was a statutory requirement, such as competition, for awarding a cooperative agreement, an unsuccessful offeror could argue that this statutory requirement was meant to protect them and therefore would be within the zone of interest and have standing under the APA to challenge the award).

[292] Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998, at 6. *See also* John Cibinic, *Cooperative Agreements: Many Things to Many People*, 9 THE NASH & CIBINIC REP. ¶ 39 (July 1995) (suggests that cooperative agreements will remain unregulated as long as there is "fair and equitable treatment" of offerors).

[293] *See generally* Scott E. Pickens, *Resolving Disputes Relating to "Other Transactions" Instruments*, 4TH ANN. FED. PROCUREMENT INST. (Mar. 12-13, 1998) (discusses how disputes are currently addressed by DARPA and the Air Force and analyzes the availability of forums in the federal court system) and Jeffrey C. Walker, *Enforcing Grants and Cooperative Agreements as Contracts Under the Tucker Act*, 26 PUB. CONT. L. J. 683 (1997) (provides extensive discussion of two Court of Federal Claims cases, Trauma Services and Thermalon Industries, and recommends amending the Federal Acquisition Regulation "reflect the distinction between contracts and procurement contract).

[294] 41 U.S.C.A. §§ 601 *et seq.* (West Supp. 1998).

transactions.[295] The CDA prescribes the procedures used to resolve disputes that arise between a contractor and the government during the performance of specified transactions, including the procurement of property and services. The debate over whether or not this statute applies to other transactions stems from both its purpose and its use of the term procurement.

The CDA would likely apply if what is being performed or developed under the other transaction, namely a service or a prototype, is for the direct benefit of the government.[296] It may also apply if the government takes title to the prototype that is developed under the other transaction.[297] However it probably does not apply to research other transactions if the primary purpose of the research other transaction is something other than the procurement of goods and services for the direct benefit of the government.[298] There are no court or board decisions on whether or not the CDA applies to other transactions.[299]

Other forums that are potentially available to resolve disputes involving other transactions are the U.S. Court of Federal Claims and the U.S. District

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[295] Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996).
[296] Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998, at 10.
[297] *Id.*
[298] Scott E. Pickens, *Resolving Disputes Relating to "Other Transactions" Instruments*, 4TH ANN. FED. PROCUREMENT INST. 12 (Mar. 12-13, 1998).
[299] *See generally* Total Med. Mgmt., Inc. v. United States, 104 F.3d 1314, 1320 (Fed. Cir. 1997) (court rejected government's argument that CDA did not apply to a Memorandum of Understanding between the Army and plaintiff and concluded that the MOU was for the benefit of the government). For an extensive discussion on the case involving the CDA and its applicability to various government agreements *see* Scott E. Pickens, *Resolving Disputes Relating to "Other Transactions" Instruments*, 4TH ANN. FED. PROCUREMENT INST. 10-12 (Mar. 12-13, 1998).

Courts.[300] The U.S. Court of Federal Claims has jurisdiction "to render judgment upon any claim against the United States founded . . . upon any express or implied contract with the United States . . ."[301] The issue regarding the jurisdiction of this forum is whether or not the courts will recognize an other transaction as a contract that is binding and enforceable. Again, there are no court decisions on this issue involving an other transaction. However, there are court decisions which discuss other types of agreements[302] and whether or not those agreements were held to be legally enforceable contracts.

In *Total Medical Management*[303] the Court of Appeals for the Federal Circuit provides an analysis of what should be included in an agreement with the government in order for that agreement to be considered an enforceable contract in the Court of Federal Claims. In this case the court held that the

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[300] 28 U.S.C.A. § 1346(a)(2); 28 U.S.C.A. § 1491(a)(1) (West Supp. 1998). This paper will discuss specifically the jurisdiction of the U.S. Court of Federal Claims. For a discussion on jurisdiction of Federal district courts pursuant to the Administrative Procedure Act *see* Scott E. Pickens, *Resolving Disputes Relating to "Other Transactions" Instruments*, 4TH ANN. FED. PROCUREMENT INST. 13-14 (Mar. 12-13, 1998).

[301] 28 U.S.C.A. § 1491(a)(1) (West 1998). The U.S. District Courts have similar jurisdiction however it is limited to contracts that do not exceed $10,000. 28 U.S.C.A. § 1346(a)(2) (West Supp.1998).

[302] *See generally* Thermalon Indus. v. United States, 34 Fed. Cl. 411 (1995) (holding that a grant between the National Science Foundation and plaintiff was an enforceable contract even though it was not a "procurement contract"); Trauma Serv. Group v. United States, 104 F. 3d 1321 (Fed. Cir. 1997) (holding that the Court of Federal Claims properly dismissed the plaintiff's case for failure to state a claim because the plaintiff did not show that its Memorandum of Agreements with the Army constituted either an express or implied-in-fact contract and stating the "[a]ny agreement can be a contract within the meaning of the Tucker Act, provided that it meets the requirements for a contract with the Government"); Trauma Serv. Group, Ltd. v. United States, 33 Fed. Cl. 426 (1995) (holding that a cooperative agreement, also referred to as a memorandum of agreement, between the Army and the plaintiff was not a contract because the provisions did not create a binding obligation); Total Med. Mgmt., Inc. v. United States, 104 F. 3d 1314 (Fed. Cir. 1997) (holding that Memorandum of Understandings between the Army and the plaintiff met the requirements of a government contract but the contract was void because it was in conflict with regulations); Quiman v. United States, 39 Fed. Cl. 171 (1997) (holding cooperative agreement did not constitute an enforceable contract).

[303] 104 F.3d 1314 (Fed. Cir. 1997).

Memorandum of Understanding between the Army and the plaintiff met the basic requirements of a valid contract but was void because it was in conflict with required regulations.[304]

First, the court asserted that the agreement must contain the requirements for a valid contract as set out by the Court of Federal Claims in the *Thermalon Industries*[305] case. In *Thermalon Industries* the Court stated that the general requirements for an express and implied contract with the United States are identical.[306] Those requirements are that the party alleging a contract with the government must demonstrate that there was "a mutual intent [by the parties] to contract including an offer, an acceptance, and consideration" and that the government representative who entered into the agreement had the authority to bind the United States in contract.[307]

Second, in *Total Medical Management* the Court found that a contract with the United States "must comply with statutorily sanctioned regulations."[308] Finally, the Court concluded that a contract, to be binding, must be sufficiently definite.[309]

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[304] Total Med. Mgmt., Inc. v. United States, 104 F.3d 1314, 1320-1321 (Fed. Cir. 1997).
[305] Thermalon Indus. v. United States, 34 Fed. Cl. 411 (1995).
[306] *Id.* at 411, 414.
[307] *Id.* (citing Fincke v. United States, 230 Ct. Cl. 233, 244, 675 F.2d 289, 295 (1982) and City of El Centro v. United States, 922 F.2d . 816, 820 (Fed. Cir. 1990)).
[308] Total Med. Mgmt., Inc. v. United States, 104 F. 3d 1314, 1319 (Fed. Cir. 1997) (citing United States v. Amdahl Corp., 786 F.2d 387, 392 (Fed. Cir. 1986)).
[309] *Id.* at 1314, 1320 (citing Modern Sys. Tech. Corp. v. United States, 979 F.2d 200, 202 (Fed. Cir. 1992)). *See also* Town of North Bonneville, Washington v. United States, 5 Cl. Ct. 312 (1984), *aff'd in part* and *rev'd in part without op.*, 833 F.2d 1024 (Fed. Cir. 1987), *cert. denied*, 485 U.S. 1007, 108 S.Ct. 1470, 99 L.Ed.2d 699 (1988) (holding that a memorandum of agreement between the Corp of Engineers and the plaintiff was contractually binding, in part, because the parties stated in the agreement that they agreed to be bound).

D. *Summary*

Congress has not affirmatively defined the term other transaction. However, an other transaction has been defined by what it is not. A research other transaction may be used to either support and stimulate research or for, arguably, the direct benefit of the government, when a standard contract, grant or cooperative agreement is not feasible or appropriate. Therefore a research other transaction can be defined as an instrument that is not a standard procurement contract, grant or cooperative agreement. A prototype other transaction may be used even if a standard procurement contract could be used. Therefore a prototype other transaction can be defined as an instrument that is "in addition" to a standard procurement contract.

There are unresolved jurisdictional issues regarding whether or not the federal government has waived its sovereign immunity with respect to other transactions. Assuming that the other transaction has included the requisite elements for a contract, other factors that affect jurisdictional issues include the purpose of the other transaction, whether it is to support and stimulate research or whether it is for the direct benefit of the government, and the remedy sought by the party, whether it is to challenge the award of an other transaction or whether it is an action seeking money damages.

IV. Implementation of Other Transaction Authority Within the Department of Defense

A. *Current Status of DoD's Implementation*

Although DoD recognizes that other transactions are a way for DoD to "leverage the best of commercial technology" for use by the military,[310] the implementation of the other transaction authority has occurred in varying degrees within the Department of Defense.[311]

DARPA awarded its 100th other transaction in 1995[312] and to date has entered into about 180 other transactions.[313] Because the military departments had not entered into research other transactions at a similar pace, in 1996 DoD convened an Integrated Product Team (IPT) to study the military services' use of 10 U.S.C. 2371 for research and how the military services' could properly use the other transaction authority for prototypes.[314] The IPT found that the field activities of the military departments were discouraged from using this authority

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[310] News Release, Office of Assistant Secretary of Defense (Public Affairs), *ARPA Signs 100 Innovative Agreements Over Five Years*, Sep. 22, 1995.

[311] *See generally* S. REP. NO. 352, 102d Cong., 2d Sess., at 240-241 (1992) (discussing the cumbersome approval requirements used by DoD before DoD organizations are allowed to use this other transaction authority and stating that this is inconsistent with streamlining principles and that "it is imperative that this vital authority not be unduly restricted through the layering of approval requirements").

[312] News Release, Office of Assistant Secretary of Defense (Public Affairs), *ARPA Signs 100 Innovative Agreements Over Five Years*, Sep. 22, 1995.

[313] *Senate Bill Extends Prototype Authority Until FY 2002*, FED. CONT. DAILY (BNA), May 27, 1998. See DARPA's web site at http://www.darpa.mil/cmo/pages/other_trans.html, visited on May 28, 1998 (breaks out, by year, total number of other transactions awarded by DARPA since 1989).

[314] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 12-13 (Mar. 18, 1996 - June 10, 1996), available at http://www.safaq.af.mil/acq_ret. This study only covers the use of research other transactions because at the time this study was conducted the military services did not have the authority to enter into prototype other transactions. *Id.*

primarily because they were required to seek approval from higher headquarters.[315] The IPT went on to recognize that DARPA's use of research other transactions had resulted in DoD obtaining technology from commercial companies that would not otherwise have done business with DoD.[316] The IPT further acknowledged that access to the commercial industrial base would be "extremely helpful" to conduct DoD business "better, faster, and cheaper."[317] Finally, the IPT made several recommendations on how to encourage the military departments to use the other transaction authority.[318]

It is clear from the most recent report to Congress that the military departments are becoming fully engaged in the use of other transaction authority.[319] Specifically, in FY 1997 the Department of Defense entered into 20 research other transactions and 50 prototype other transactions for a total of 70

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[315] *Id.* at 17-18. Up until late 1993 the military services had to seek approval from the Deputy Secretary of Defense to use the authority for research other transactions. After the Director of Defense Research and Engineering (DDR&E) issued interim guidance on the use of other transactions the military services retained the other transaction authority at the major command level. *Id.* Since this time DoD has issued guidance encouraging major commands to delegate other transaction authority to field organizations. Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Instruments for Stimulation or Support of Research & Attachment* (Dec. 2, 1997).

[316] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 12 (Mar. 18, 1996 - June 10, 1996), available at http://www.safaq.af.mil/acq_ret.

[317] *Id.*

[318] *Id.* at 6-7. The recommendations suggested by the IPT that have been implemented by DoD for research other transactions include obtaining an amendment to the language in 10 U.S.C. § 2371 to delete the term "only" and issuing specific guidance that encourages the use of other transactions. Id. at 6

[319] DEPARTMENT OF DEFENSE ANNUAL REPORT ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FY97 UNDER 10 USC 2371 (undated). *See generally* Department of Navy web site at http://www.abm.rda.hq.navy.mil/bpot.html, visited on Apr. 18, 1998 (provides the Navy's guidance on use of other transactions and the delegations of authority for use of the research and prototype other transaction authorities within the Department of the Navy) and Department of the Air Force web site at http://www.afmc.wpafb.af.mil/HQ-AFMC/PK/pkt/otjump.htm (provides the Air Force's guidance on other transactions); KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS

other transaction agreements.[320] DARPA, the Air Force, the Army and the Navy awarded the 20 research other transactions.[321] DARPA, the Air Force, the Army, the Navy, and the National Imagery and Mapping Agency awarded the 50 prototype other transactions.[322] Thirty of the 50 prototype other transactions were awarded pursuant to the Commercial Operation and Support Savings Initiative (COSSI).[323] If all 30 of the COSSI projects are successful it is estimated that they will generate a $3 billion savings for DoD.[324]

B. *Characteristics of Other Transactions*

Some of the common characteristics that have emerged during DoD's implementation of its other transaction authority include flexibility, teaming, cost sharing, and use of commercial business practices. Such characteristics are evidence that the use of this authority is furthering DoD's objectives for science and technology, acquisition reform, and civilian/military integration. Ultimately, this means that DoD's client, the warfighter, will have access to the best technology available to carry out its national security mission.

(RAND, 1997) (discusses Army's use of other transaction authority and analyzes participants views).

[320] DEPARTMENT OF DEFENSE ANNUAL REPORT ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FY97 UNDER 10 USC 2371, introduction (undated). Funding for the 20 research other transactions included $66.8 million of Government funds and $78.6 million of private industry's funds. Funding for the 50 prototype other transactions included $297.2 million in Government funds and $107.8 million in private industry funds. *DOD Expects $3 Billion In Savings From "Other Transactions" Awarded In New Initiative*, GOV'T CONTRACTOR (Fed. Pubs. Inc.) 6, 7 (Feb. 18, 1998).

[321] DEPARTMENT OF DEFENSE ANNUAL REPORT ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FY97 UNDER 10 USC 2371, introduction (undated).

[322] *Id.*

[323] *Id.* "The purpose of COSSI is to reduce operations and support costs by introducing commercial products or processes into fielded weapon systems." *Id.*

[324] *Id.*

1. Flexibility

A primary characteristic of an other transaction is that it is a flexible contractual instrument. Consistent with the legislative intent,[325] DoD's guidance for other transactions has consistently stressed flexibility.[326] Specifically, the DoD guidance on research other transactions stresses the importance of flexibility as a means to "facilitate participation in defense research by for-profit firms that have not traditionally done business with the Government."[327] To achieve this goal DoD encourages agreements officers to negotiate provisions that have traditionally been barriers preventing the participation of for-profit

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[325] *See generally* H.R. REP. NO. 724, 104th Cong., 2d Sess., at 768 (1996) (explaining that the authority for other transactions was expanded "to allow additional flexibility in the acquisition of prototype technologies and systems"); S. REP. NO. 267, 104th Cong., 2d Sess., at 314 (1996) (explaining that one of the intentions in creating other transaction authority was "to maximize flexibility on intellectual property negotiations"); S. REP. NO. 352, 102d Cong., 2d Sess., at 240-241 (1992) (discussing the use of other transaction authority as "flexible transactional authority" that is "vital to the development of cost-shared projects with nonprofit and other sector entities that are crucial to the future of the national defense and technology base" and stating that "it is imperative that this vital authority not be unduly restricted through the layering of approval requirements").

[326] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 4 (Mar. 24, 1998); Under Secretary of Defense Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996). *See generally* KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS 33 (RAND, 1997) (discusses the results of a study conducted with companies that have not traditionally done business with the Army and finding that the "Army must be flexible in its dealings" with these companies).

[327] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 2 (Mar. 24, 1998). *See* KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS 44 (RAND, 1997) (concluding that attracting companies that have not traditionally done business with the Department of the Army requires flexible contractual instruments).

firms. Such provisions include financial management systems, cost principles, and rights patents, technical data and computer software.[328]

In addition, the guidance issued by DARPA and the Air Force emphasizes the flexibility that is available when using other transaction authority.[329] DARPA uses its model other transaction as a starting point for negotiating terms and conditions.[330] Specifically, the willingness to alter the intellectual property provision and the audit provision, both of which often prevent DoD from doing business with commercial companies,[331] represent the flexibility that is available

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[328] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 2 (Mar. 24, 1998).

[329] *See* DRAFT AIR FORCE GUIDE "OTHER TRANSACTIONS FOR PROTOTYPE" (July 10, 1997) (establishes Air Force guidance on use of prototype other transaction authority and provides a model other transaction) (on file with author); ADVANCED RESEARCH PROJECTS AGENCY DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS (Feb. 1995) (establishes guidance for DARPA's use of research other transactions and provides a model other transaction).

[330] *See* NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS (Nov. 1997) (contains DARPA's model research other transaction agreement which is titled Company Model (Jan. 31, 1997) and Consortium Model (Jan. 31, 1997)). For a discussions on the specific provisions of DARPA's model other transaction *see* Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998 (analyzes provisions in DARPA's model other transaction) and Richard N. Kuyath, *The Untapped Potential of the Department of Defense's "Other Transaction" Authority*, 24 PUB. CONT. L. J. 521, 526-529 (1995) (analyzes provisions of DARPA's model other transaction). *See also* the Air Force Model Research Other Transaction Agreement available at http://www.afmc.wpafb.af.mil/HQ-AFMC/PK/pkt/index.htm under assistance regulations and guides, visited on July 25, 1998 and the Air Force Model Prototype Other Transaction Agreement available at http://www.afmc.wpafb.af.mil/HQ-AFMC/PK/pkt/otjump.htm, visited on July 25, 1998.

[331] *See* MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" (NOV. 1995) (finding that participants in DARPA other transaction projects would not have been attempted their projects under the rules of the Federal Acquisition Regulation (FAR) because of those rules require rigid schemes for intellectual property, intrusive accounting systems, and onerous requirements for supplier and subcontractor relationships); JOSEPH T. BOLOS, A REPORT ON THE USE OF 10 U.S.C. 2371 "OTHER TRANSACTION" AUTHORITY AND 10 U.S.C. 2371 SECTION 845 PROTOTYPE AUTHORITY IN THE DEPARTMENT OF DEFENSE 57 (Mar. 1997) (discusses finding that a government program manager, through an other transaction solicitation, found commercial companies who do not normally do business with DoD and whose capabilities went beyond what was expected); GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 6 (Mar. 1996) (finding that companies that have not traditionally done business with DoD have not done so because of government audits and intellectual property provisions); GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-94-20, *Acquisition Requirements: Impact*

in negotiating an other transaction.[332] The General Accounting Office (GAO) has also reported that the flexible terms and conditions of research other transactions, such as intellectual property provisions and financial management provisions, have attracted firms that have not traditionally done business with DoD.[333]

An other transaction between DARPA and Hewlett-Packard provides an example of the flexibility available with the other transaction authority.[334] Hewlett-Packard had previously declined to conduct research with the government because it wanted to protect its technical data rights.[335] However, under the other transaction authority, Hewlett-Packard and DARPA were able to

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on Company Structures and Operations 5 (Apr. 1994) and KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS 24-26, 33 (RAND, 1997) (discusses features of other transactions, including the ability to negotiate intellectual property rights, to reduce government audits through fixed-price milestone payments; and to enter into cost-sharing arrangements, that make them "a powerful tool" for attracting companies that have not traditionally done business). *See also* Ralph C. Nash, *An Efficient Procurement System*, 9 THE NASH & CIBINIC REP. ¶ 30 (May 1995) (stating that "if anything is clear, it is that the Government will not be able to become an efficient buyer unless it buys from commercial contractors).

[332] *See* S. REP. NO. 267, 104th Cong., 2d Sess., at 314 (1996) (explaining Congress' intent in creating other transaction as a tool "to maximize flexibility on intellectual property negotiations with private sector entities).

[333] GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 3-4 (Mar. 1996). Some of the firms that have participated in an other transaction which have not historically participated in DoD research projects include Cray Research, Hewlett-Packard, and IBM. *Id.* at 5. *See* S. REP. NO. 267, 104th Cong., 2d Sess., at 314 (1996) (discusses the GAO report and clarified issues involving intellectual property, cost sharing, and when to use an other transaction). *See generally R&D, DOD Using Nontraditional Research Approaches To Attract More Commercial Firms, GAO Reports*, 65 FED. CONT. REP. (BNA) No. 14, at D-9 (Apr. 8, 1996).

[334] GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 6 (Mar. 1996). This other transaction was a consortium led by Hewlett-Packard. *Id.* at 6.

[335] GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-94-20, *Acquisition Requirements: Impact on Company Structures and Operations* 5 (Apr. 1994)

negotiate a research agreement involving a technology that will lower the costs of high speed data transmission.[336]

First, the other transaction provided flexibility in its financial management provisions.[337] The terms, as negotiated between DARPA and Hewlett-Packard,

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[336] *Id.* at 6.

[337] *Id.* As discussed earlier in this paper one of the barriers commercial companies from doing business with DoD is the government's cost accounting systems and requirements for audits. In discussing the significant flexibility DARPA has in negotiating a prototype other transaction, the DoD IPT observed that a key difference between DARPA's prototype other transactions and a standard contract was that the other transactions do not provide for an audit or review of the contractor records by the Defense Contract Audit Agency. DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 23 (Mar. 18, 1996 - June 10, 1996), available at http://www.safaq.af.mil/acq_ret. Instead DARPA relies upon the company's internal auditors for review and certification of accounting procedures and documents. This is supplemented by a bi-annual review by independent auditors. *Id.* at 23. The DARPA model other transaction allows the government to have access to a company's relevant financial records for up to 3 years after the expiration of the other transaction agreement. NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS (Nov. 1997) (DARPA Company Model, Article V) An issue being raised within DoD currently is how audits of other transactions should be conducted, namely should they be conducted by the Defense Contract Audit Agency or should they be conducted by an outside auditor mutually agreed to by the government and the awardee. Kevin Flanagan, *Risk of Using "Other Transactions": A Watchdog's Perspective*, 4TH ANN. FED. PROCUREMENT INST., at 5 (Mar. 12-13, 1998). One argument is that DoD directives prohibit activities from contracting for audit services unless DoD does not have the audit expertise and the activity receives prior approval from the DoD Office of Inspector General. *Id.* at 5. The DoD guidance specifies that 10 U.S.C. §2313, which provides access to a contractor's records for audits, does not necessarily apply to other transactions. Under Secretary of Defense for Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996) (on file with author). Arguably 10 U.S.C. § 2313 does not apply to other transactions because other transactions do not fall within the perimeters by the statute. AMERICAN BAR ASSOCIATION, DRAFT AD HOC WORKING GROUP ANALYSIS ON THE APPLICABILITY OF CERTAIN PROCUREMENT-RELATED STATUTES TO UTILIZATION OF OTHER TRANSACTIONS AUTHORITY FOR PRODUCTION OF PROTOTYPES OF WEAPONS OR WEAPONS SYSTEMS A-16 (Mar. 10, 1998) The statute allows the government access to a contractor's records when the "contractor is performing a cost-reimbursement, incentive, time-and-materials, labor-hour, or price-determinable contract . . ." or "when an audit is needed to evaluate the accuracy, completeness, and currency of certified cost or pricing data required pursuant to . . . the Truth in Negotiations Act." *Id.* at A-16, A-17. An other transaction, because it is not a procurement contract, does not fall within either of these proscribed perimeters. Therefore 10 U.S.C. §2313 does not apply to other transactions. *Id.* at A-16, A-17. *Compare with* Defense Contract Audit Agency Assistant Director of Policy and Plans Larry P. Uhlfelder Memorandum, *Audit Guidance on Evaluation of Other Transactions* (May 12, 1998) (amended by Defense Contract Audit Agency Assistant Director of Policy and Plans Lawrence P. Uhlfelder Memorandum, *Audit Guidance on Evaluation of Other Transactions* (Mar. 25, 1998)) available at http://www.dtic.mil/dcaa/, visited on July 4, 1998 and GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-98-151, *Evolved Expendable Launch Vehicle: DOD Guidance Needed to Protect Government's Interest* (June 1998) (recommendations of Air Force's planned use of the other transaction

allowed the company to maintain an accounting system that complied with generally accepted accounting principles and further, did not require the company to submit to an annual government audit but rather that the company be subject to an audit by an independent auditor instead.[338]

Second, the intellectual property provisions negotiated under the other transaction were more flexible because the Bayh-Dole Act does not apply to other transactions.[339] The intellectual property provisions for this other

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authority on a large program includes giving consideration to some degree of government audit authority).

[338] GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 6 (Mar. 1996).

[339] *Id.* at 7. The Bayh-Dole Act, 35 U.S.C. §200 *et seq.*, promulgates the government's general policy involving "patent rights in inventions developed with federal assistance." *Id.* at 7. The purpose of the statute is "to facilitate the commercialization and public availability of inventions." *Id.* at 7. There are several administrative requirements that a contractor must comply with in order to ensure that it retains title to its invention. 35 U.S.C. § 202. DARPA has consistently held that neither the Bayh-Dole Act nor the technical data provisions of Title 10, U.S.Code apply to other transactions. Defense Advanced Research Projects Agency Office of General Counsel Richard L. Dunn Memorandum of Law, *Scope of Section 845 Prototype Authority* (Oct. 24, 1996) available at http://www.arpa.mil/cmo/pages/scope/html, visited on Nov. 13, 1997. The DoD IPT and the GAO also concluded that the Bayh-Dole Act does not apply to other transactions. DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 10 (Mar. 18, 1996 - June 10, 1996), available at http://www.safaq.af.mil/acq_ret. and GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 13 (Mar. 1996). It is the complex rules and regulations that govern intellectual property rights under procurement contracts which prevent some commercial companies from entering into a funded research projects with the government. Richard N. Kuyath, *Intellectual Property Rights Under Department of Defense "Other Transactions"*, 4TH ANN. FED. PROCUREMENT INST., at 1 (Mar. 12-13, 1998). One of the reasons Congress enacted the other transaction authority was "to maximize flexibility on intellectual property negotiations with private sector entities." S. REP. NO. 267, 104th Cong., 2d Sess., at 314 (1996) Congress has also said that it did not intend for the provisions of the Bayh-Dole Act to apply to other transactions. *Id.* For further information on how intellectual property is handled under other transaction agreements *see* Defense Advanced Research Projects Agency Memorandum, *Intellectual Property*, available at http://www.arpa.mil/cmo/pages/intellectual.html, visited on Nov. 13, 1997 (provides a memorandum on intellectual property under other transactions which discusses patents, copyrights, and trade secrets); Richard N. Kuyath, *Intellectual Property Rights Under Department of Defense "Other Transactions"*, 4TH ANN. FED. PROCUREMENT INST. (Mar. 12-13, 1998) (discusses "statutes and regulations governing intellectual property under DoD-funded research projects and their relationship to" other transactions); Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998 (discusses the patents and data rights clauses under DARPA's model other transaction). *See generally* Robert C. Spreng, *Increasing the Effectiveness of Government/Industry R&D Investment*, CONT. MGMT. 29 (May 1997) (discusses the importance

transaction increased the time to notify the government of a subject invention, increased the time to notify the government as to whether it intends to take title, delayed the time for the government to exercise its government purpose license rights, allowed the consortium to maintain inventions and data as trade secrets,[340] and prohibited the government from receiving any rights in technical data unless DARPA exercised its "march-in" rights.[341]

In addition, the GAO noted that traditional defense contractors have also received more flexible provisions for intellectual property rights.[342] For example, McDonnell Douglas, pursuant to an other transaction agreement, was not required to grant any rights in data or to deliver any data developed under the agreement. Furthermore the government's rights in inventions where the consortium took title did not start until 10 years after the completion or

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of protection of intellectual property rights to commercial firms, observes that in order for the government to tap into the advanced technology base it must substantially improve the protection of intellectual property, and recommends that the government provide the same type of protection for a companies intellectual property as it does for its highly classified programs) and Defense Advanced Research Projects Agency Memorandum, *Examples of DARPA's Use of Other Transactions and Consortia* (undated), available at http://www.arpa.mil/cmo/pages/consortia.html (discusses examples of how an other transaction allows participants to preserve their intellectual property rights).

[340] There is no mechanism for protecting an invention as a trade secret under a standard procurement contract. *See* Defense Advanced Research Projects Agency Memorandum, *Intellectual Property* (undated), available at http://www.arpa.mil/cmo/pages/intellectual.html, visited on Nov. 13, 1997 (discusses trade secrets in relation to other transactions).

[341] GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 7-8 (Mar. 1996). Although not statutorily required for technical data, DARPA includes a "march-in" provision in its "Data Rights" clause. For a discussion of DARPA's data rights clause *see* Richard N. Kuyath, *Intellectual Property Rights Under Department of Defense "Other Transactions"*, 4TH ANN. FED. PROCUREMENT INST. 13-15 (Mar. 12-13, 1998). For patents, under the Bayh-Dole Act, the government retains the right to march-in if the contractor has not commercialized the invention with a certain period of time and require the contractor "to grant a nonexclusive, partially exclusive or exclusive license in any field of use" to a third party "upon terms that are reasonably under the circumstances." 35 U.S.C. § 203 and Richard N. Kuyath, *Intellectual Property Rights Under Department of Defense "Other Transactions"*, 4TH ANN. FED. PROCUREMENT INST. 2-3 (Mar. 12-13, 1998).

termination of the agreement.[343] The government agency entering into this agreement analyzed that this allocation of rights was consistent with its objectives "to develop technologies that further the aerospace technology base and develop technologies that will transition to military applications at some point in the future."[344]

Thus, GAO concluded that other transactions provide a tool that enables DoD to leverage both private sector technology and financial investment, and that reduces barriers between the defense and civilian industrial bases, furthering DoD's objectives for civil/military integration.[345]

DoD's 1997 report to Congress on the use of its other transaction authority provides additional examples of the contractual flexibility of other transaction agreements.[346] One example is a research other transaction

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[342] GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 8 (Mar. 1996).

[343] *Id.*

[344] *Id.*

[345] *Id.* at 3-4. The GAO estimated "that about 42 percent of the 275 commercial firms that participated in 1 or more agreements were firms that traditionally had not performed research for DOD." *Id.* at 5.

[346] DEPARTMENT OF DEFENSE ANNUAL REPORT ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FY97 UNDER 10 USC 2371 (undated). The recipient's of other transactions reported by DoD in this report include Cisco Systems, Ipsilon Networks, Science Applications International Corporation, University of Delaware, Texas Instruments Incorporated, Electronic Power Research Institute, Semiconductor Research Corporation, The Regents of the University of California (Berkeley), Parallel Optical Network Interconnect Consortium, Holographic Optical Interconnect Technology Consortium, 3COM Corporation, Beam Technologies, Inc., CFD Research Corporation, Sampson Consortium c/o McDonnell Douglas Corporation, SMA Consortium c/o Boeing Defense and Space Group, AM3 Consortium, Corporation for National Research Initiatives, Applications Technology, Inc., Silicon Mountain Design, Inc., Mayflower Communications Company, Inc., ALPINE Consortium, The Tactical Common Data Link Consortium, L-3 Communications, Motorola Inc., Lockheed Martin, Government Electronic Systems Team (including Litton Industries, Ingalls Shipbuilding, Newport News Shipbuilding), Bath Iron Works Corporation Corporate Team (including General Dynamics, Marine Division, Electronic Boat Corporation, Raytheon Corporation, and Science Applications International Corporation), Northrop Grumman Corporation Electronic Systems and Integration Division Team (including National Steel and Shipbuilding Co., Vitro Corp., Solipsys, and Band

awarded by DARPA to the Holographic Optical Interconnect Technology Consortium.[347] The funding was as follows, the government provided $3,475,000 and the consortium provided $3,697,000. Included in the consortium was Motorola's Applied Simulation and Modeling Research Laboratory which is a commercial firm that would not have entered into "a DOD agreement absent the flexibility provided by 10 USC 2371."[348] The report states that certain rights, such as payments, disputes, intellectual property and foreign access to technology, were important to this recipient and therefore additional negotiation was required to reach an agreement with this consortium.[349]

Likewise the Air Force reported, in a research other transaction that it entered into with Silicon Mountain Design, Inc., that the "feature of flexibility to negotiate appropriate data rights provided by the authority of 10 USC 2371" allowed the award to be accomplished.[350] DARPA also reported, in a prototype other transaction for advanced logistics technology, that "[t]his collaboration has

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Lavis & Associates, Inc.), Scaled Composites, Inc., DWA Aluminum Composites, Harris Corporation, JAYCOR, McDonnell Douglas Corporation, General Electric (General Electric Aircraft Engines), Raytheon Corporation, Superconducting Core Technologies, Inc., Sikorsky Aircraft Corp., TRW Inc., Tracor Aeorspace, Inc., Cryptek Secure Communications, Mobile Datacom Corporation, Altamont Technologies, Inc., Kollsman, Inc., QuesTech Packaging, Inc., McDonnel Douglas Helicopter Company, Hughes Aircraft Company Defense Systems, BF Goodrich, Newco, Inc., Electrosource, Inc., Minnesota Mining and Manufacturing, Alliant/Valence Limited Liability Corporation, Signal Processing Systems, VISICOM Laboratories, Inc., Physical Acoustics Corporation, Spatial Integrated Systems, Allied Signal, Inc., VIASAT, Inc., Lockheed Martin Federal Systems, Raytheon Texas Instruments Systems, Inc., Tivoli Systems, Inc., Catepillar, Howell Instruments, Inc., California Microwave Government Electronics, National Media Laboratory Strategic Alliance, Autometric Inc. *Id.*

[347] DEPARTMENT OF DEFENSE ANNUAL REPORT ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FY97 UNDER 10 USC 2371 10 (undated). The goal of this agreement was to "perform a program of coordinated research among members of industry and universities which will lead to the development and demonstration of free-space holographic optical interconnect technology." *Id.*

[348] *Id.* at 10.

[349] *Id.*

[350] *Id.* at 20. This project related to imaging technology. *Id.*

created a 'team' of performers that did not previously exist in the technology and industrial base."[351]

Finally a defense agency, the National Imagery and Mapping Agency (NIMA), reported that its use of a prototype other transaction with Autometric, Inc. resulted in Autometric's partnering with "powerhouse commercial R&D entities," which include Rochester Institute of Technology, Oracle, Kodak, Ampex, U.S. Sprint, and Silicon Graphics.[352] This prototype will combine technologies to "improve the imagery analyst's ability to quickly find and manipulate images for analysis."[353] NIMA noted that the use of an other transaction allowed commercial entities that have never contracted with DoD, because of the inability to negotiate intellectual property rights and the inability to use commercial auditing practices, to participate in this prototype project.[354]

2. Teaming

Another characteristic that has emerged from DoD's implementation of other transaction authority is a new type of teaming arrangement between offerors and between the government participants. The type of teaming arrangement that has emerged between offerors participating in an other transaction is termed a consortium.[355] The majority of DARPA's research other

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[351] *Id.* at 22.
[352] Id. at 73. The funding for this prototype included $2,196,000 in government funds and no industry funds. *Id.*
[353] *Id.*
[354] *Id.*
[355] Defense Advanced Research Projects Agency Memorandum, *Teaming Under 10 USC 2371*, 1 (undated) available at http://www.arpa.mil/cmo/pages/teaming.html, visited on Nov. 13, 1997.

transactions have been with multi-party consortium.[356] DARPA distinguishes a consortium from a strategic partnership or joint venture. Consortiums generally consist of multiple participants where a joint venture or strategic partnership generally consist of only two participants.[357]

This new type of teaming allows DoD to leverage multiple resources and technical know-how for the benefit of both industry and the government.[358] For example, one consortium formed pursuant to an other transaction project was made up of technology developers, commercial airline companies and government laboratories.[359] This consortium worked to address a technology which would aid both the military and the commercial airline market.[360]

When a consortium arrangement is used to carry out an other transaction there are two separate documents that are executed: the other transaction

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[356] JOSEPH T. BOLOS, A REPORT ON THE USE OF 10 U.S.C. 2371 "OTHER TRANSACTION" AUTHORITY AND 10 U.S.C. 2371 SECTION 845 PROTOTYPE AUTHORITY IN THE DEPARTMENT OF DEFENSE 23 (Mar. 1997).

[357] Defense Advanced Research Projects Agency Memorandum, *Teaming Under 10 USC 2371*, 1 (undated) available at http://www.arpa.mil/cmo/pages/teaming.html, visited on Nov. 13, 1997.

[358] *Id.* at 6. *See* MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" A-1, A-2, A-3 (NOV. 1995) (provides a chart of DARPA projects listing the consortium and its members).

[359] Defense Advanced Research Projects Agency Memorandum, *Examples of DARPA's Use of Other Transactions and Consortia* 3-4 (undated), available at http://www.arpa.mil/cmo/pages/consortia.html, visited on Nov. 13, 1997. This consortium was made up of technology developers such as Lear Astronics, FLIR Systems, Inc., Allied Signal Inc., Lockheed Martin, and Norton Performance Corporation. The consortium also included commercial airlines such as Northwest and United and government laboratories such as Air Force Wright Laboratories.

[360] Defense Advanced Research Projects Agency Memorandum, *Examples of DARPA's Use of Other Transactions and Consortia* 3-4 (undated), available at http://www.arpa.mil/cmo/pages/consortia.html, visited on Nov. 13, 1997. This project was for demonstrating a display and sensor system that would allow pilots to land safely in low visibility conditions without the use of large ground-based radar. The benefit of the development of this technology for the commercial airlines is cost savings. Commercial airlines lose approximately $150 million per year due to weather related delays. The benefit for the military is that it would allow a "First In" capability, namely that the military aircraft would be able to conduct flight

agreement and the consortium's Articles of Collaboration.[361] DARPA requires[362] that the consortium enter into an agreement between themselves, which is typically called the "Articles of Collaboration."[363] This agreement sets out the rights and responsibilities of each consortium member. Although there is no prescribed format for this agreement, DARPA requires that the consortium submit their Articles of Collaboration and recommends that it address, at a minimum, the management structure of the consortium, the method of disbursing Government payments to Consortium members, the process for resolution of disputes between Consortium members, the possibility of termination of the Consortium, and the ownership of intellectual property created under the Agreement.[364]

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operations in low visibility conditions throughout the world. This gives the military the advantage of being able to operate where other cannot thereby achieving a tactical advantage. *Id.*

[361] ADVANCED RESEARCH PROJECTS AGENCY DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS 3 (Feb. 1995). Other transaction authority has given DARPA the flexibility to deal with multinational and foreign owned firms. Defense Advanced Research Projects Agency Memorandum, *Foreign Access to Technology* 1 (undated) available at http://www.arpa.cmo/pages/foreign.html, visited on Nov. 13, 1997. DARPA has developed a foreign access to technology clause to ensure that the principal economic benefit of DARPA funded projects is realized by the United States economy. *Id.* Participant's have found that DARPA's provision is sufficiently flexible. MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" 19 (NOV. 1995).

[362] This raises an issue of whether or not the government can actually require a consortium to enter into such an agreement between themselves. However, if the consortium did not enter into an agreement between themselves, the government could assess the risk that imposes on its program.

[363] ADVANCED RESEARCH PROJECTS AGENCY DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS 3 (Feb. 1995). *See* NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS (Nov. 1997) (contains DARPA's model research other transaction agreement which is titled Company Model (Jan. 31, 1997) and model Articles of Collaboration which is titled Consortium Model (Jan. 31, 1997)).

[364] ADVANCED RESEARCH PROJECTS AGENCY DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS 3 (Feb. 1995). DARPA also states that its use of other transaction authority does not require the consortium to be a specific legal entity requiring registration under the National Cooperative Research and Production Act of 1993 (codified at 15 U.S.C. §§ 4301-4305) *Id.* at 3. However it has been recommended that the consortium include a disclaimer in their agreement that it is not to be construed as any type of legal entity. Carl L. Vacketta et al, *Other Transactions*, BRIEFING

DARPA recognizes that much of the success or failure of the other transaction project depends on the ability of the members of the consortium to work together.[365] The Institute for Defense Analysis conducted a survey of participants, composed primarily of industry groups, that had participated in a DARPA other transaction project.[366] The study found that some of the critical elements of a successful consortium include partner selection and up-front resolution of difficult issues such as intellectual property rights.[367] Finally, participants reported that the working relationships among the consortium members resulted in a high level of trust which led to other business opportunities.[368]

The government also has learned lessons on how its team operates when executing an other transaction. DoD found during a prototype other transaction project that the lack of established regulations "necessitated close communication between the Government contracting, legal and technical team

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PAPERS, Mar. 1998 at 7. It is also recommended that the consortium consider providing notice regarding its formation to the Federal Trade Commission and the Department of Justice so that it obtains the protections under the National Cooperative Research and Production Act of 1993. *Id.* at 7. *See generally,* Carl L. Vacketta et al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998 (discusses specific clauses included in Articles of Collaboration issues to consider when entering into a consortium); National Cooperative Research Act of 1984, Pub. L. No. 98-462, 98 Stat. 1815 (Oct. 11, 1984) (as amended by Pub. L. No. 103-42, 107 Stat. 117 (1993)) (codified at 15 U.S.C. §§ 4301-4305).

[365] ADVANCED RESEARCH PROJECTS AGENCY DRAFT GUIDANCE FOR USE OF OTHER TRANSACTIONS 3 (Feb. 1995).

[366] MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" (NOV. 1995) (discusses findings from a survey conducted of consortium members who participated in an other transaction with DARPA).

[367] Id. at 11, 15. *See also* JOSEPH T. BOLOS, A REPORT ON THE USE OF 10 U.S.C. 2371 "OTHER TRANSACTION" AUTHORITY AND 10 U.S.C. 2371 SECTION 845 PROTOTYPE AUTHORITY IN THE DEPARTMENT OF DEFENSE 58, 59 (Mar. 1997) (findings of a survey conducted among government participants confirmed that it can be difficult for consortium members to reach agreement on their Articles of Collaboration).

[368] MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" 16 (NOV. 1995).

members."[369] The successful working relationship among the government team members resulted from a small program office,[370] which gave team members timely access to each other, and the ability of the team members to be flexible and open-minded in utilizing this authority.[371]

3. Cost-Sharing / Affordability

A third characteristic which has emerged through DoD's implementation of its other transaction authority is cost-sharing with a focus on affordability. As discussed earlier 50/50 cost-sharing is required to the "extent . . . practicable" for research other transactions but is not required for prototype other transactions.[372] Specifically, DoD's 1997 report to Congress shows that funding for DoD's 20 research other transactions included $66.8 million of government funds and $78.6 million of private industry's funds.[373] Likewise, DoD's funding for prototype other transactions in 1997 included $297.2 million of government

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[369] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED 19 (Dec. 31, 1997) (on file with author).

[370] The Arsenal Ship Program Office consisted of six government personnel and fourteen contractor personnel. DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED 36 (Dec. 31, 1997) (on file with author).

[371] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED 19 (Dec. 31, 1997) (on file with author). The study noted that traditionally legal and contracting offices are viewed as impediments to this process however in this case the support provided to the team from the legal and contracting office team members was invaluable. *Id.* DoD guidance also recognizes that a research other transaction requires "closer cooperation between the program officials and the agreements officer. Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* at 4 (Mar. 24, 1998) (on file with the author).

[372] 10 U.S.C.A. § 2371(e)(1)(B) (West Supp. 1998); National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 845(a), 107 Stat. 1721, 1722 (Nov. 30, 1993) as amended by National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 804(a), 110 Stat. 2605 (Sept. 23, 1996).

[373] DEPARTMENT OF DEFENSE ANNUAL REPORT ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FY97 UNDER 10 USC 2371, introduction (undated) and *DOD*

funds and $107.8 million in private industry funds.[374] Also, in 1996 the GAO reviewed 72 other transaction projects valued at $1.7 billion. The GAO found that for every dollar DoD contributed to the other transaction, recipients contributed $1.39.[375] This resulted in the recipients contributing 58% or $1.0 billion of the total $1.7 billion.[376]

The GAO found that cost-sharing allows DoD to leverage the private sector's financial investment and reduce its costs.[377] Industry participant's have also found that cost-sharing serves as "a test of commitment" and as a strong incentive to avoid waste.[378] Finally, DARPA agrees that cost-sharing shifts some of the risk to the offerors. It creates an "acid test" of the offeror's faith in the commercial viability of their proposed technology.[379] DARPA has also found that

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Expects $3 Billion In Savings From "Other Transactions" Awarded In New Initiative, GOV'T CONTRACTOR (Fed. Pubs. Inc.) 6, 7 (Feb. 18, 1998).

[374] DEPARTMENT OF DEFENSE ANNUAL REPORT ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FY97 UNDER 10 USC 2371, introduction (undated) and *DOD Expects $3 Billion In Savings From "Other Transactions" Awarded In New Initiative*, GOV'T CONTRACTOR (Fed. Pubs. Inc.) 6, 7 (Feb. 18, 1998).

[375] GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 4, 10 (Mar. 1996).

[376] *Id.*

[377] *Id. See* KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS 24 (RAND, 1997) (concludes that cost-sharing allows the Army to meet their technology goals at a reduced cost and that it can be used to attract companies that have not traditionally done business with the Army because industry is also concerned with saving money). *Compare with* American Bar Association Section of Public Contract Law Scott E. Pickens Memorandum & Attachment (Request for Blanket Authority) (Feb. 20, 1998) (recommends six resolutions regarding prototype other transactions including cost sharing should not be required by DoD for prototype other transactions but if it is required then the amount of cost sharing should be limited to the "relative amount of commercial benefit" received by the contractor).

[378] MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" 21, 22 (NOV. 1995).

[379] Defense Advanced Research Projects Agency, *Cost Sharing* 2 (undated), available at http://www.arpa.mil/cmo/pages/cost.html, visited on Nov. 13, 1997. DARPA states that DoD's big cost savings are obtained when the technology becomes available in the commercial marketplace. Therefore it sees the initial costs saved by DoD in cost-sharing as less important than using cost-sharing as a way to incentivize participants to commit to a technology's commercial viability. *Id. Compare with* Linda R. Cohen, *Dual-Use and the Technology*

cost-sharing, by creating a partnership with the government, reduces the adversarial relationships that often occur with standard procurement contracts.[380]

DARPA generally recognizes two types of contributions for cost-sharing:[381] cash contributions and in-kind contributions. Cash contributions include cash outlays for completion of the statement of work, funds used to acquire material, funds used to buy equipment or pay for labor, and prospective sources of funds such as current or prospective IR&D. Cash can be obtained from outside sources such as funds from venture capitalists or donations from state or local governments.[382] In-kind contributions include the estimated fair market value of property, such as capital equipment, facilities or privately funded intellectual property, which will be used to complete the project.[383] DARPA evaluates the offerors cost-sharing in its proposal. Cash contributions are usually favored over in-kind contributions because cash represents a greater commitment by the offeror.[384]

Finally, there is an issue as to whether to allow the value of prior research as a cost-share contribution. DoD's guidance for valuation of cost-share for

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Reinvestment Project, in INVESTING IN INNOVATION: CREATING A RESEARCH AND INNOVATION POLICY THAT WORKS 190-191 (1998) (analyzes the Technology Reinvestment Project, which emphasized cost-sharing, and concludes that for the government to incentivize private industry the government must align the goals of its program with the incentives of the firms it is trying to target).

[380] Defense Advanced Research Projects Agency, *Cost Sharing* 2 (undated), available at http://www.arpa.mil/cmo/pages/cost.html, visited on Nov. 13, 1997.

[381] *Id.*

[382] *Id.*

[383] *Id.* DARPA defines fair market value as the cost a prudent businessperson would pay a third party for its use. *Id.* DARPA does not allow costs previously incurred such as past expenditures in developing technology or costs for work done on past or current government contracts to be made as contributions to the participants cost share requirement. *Id.*

[384] *Id.* at 3.

research other transactions directs agreements officers not to "count the recipient's costs of prior research as cost share."[385] Agreements officers are to count as cost-share only additional resources provided by the recipient to carry out the project.[386] However, DoD's guidance provides that an agreements officer may find that the 50% cost-share is impracticable and reduce the recipient's share of the costs below 50%.[387]

DoD's implementation of prototype other transactions is also using other techniques to achieve its goal of affordability. DoD's guidance on cost with respect to prototype other transactions states that DoD activities must include, in the prototype other transaction, "assurances that the cost to the government is

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[385] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 5 (Mar. 24, 1998). DARPA's guidance states that "the value of prior research is acceptable in certain circumstances, such as when the participant possesses significant technical knowledge but is unable or unwilling to provide cash or in-kind contributions." Defense Advanced Research Projects Agency, *Cost Sharing* 3 (undated), available at http://www.arpa.mil/cmo/pages/cost.html, visited on Nov. 13, 1997.
Compare with S. REP. NO. 267, 104th Cong., 2d Sess., at 314 (1996) (explaining Congress' intent "that sunk cost of prior research efforts not count as cost-share on the part of private sector firms" and that "[o]nly the additional resources provided by private sector need to carry out the specific project should be counted"); GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-96-11, *DOD Research: Acquiring Research By Nontraditional Means* 12 (Mar. 1996) (suggested that accepting prior research in lieu of cash or in-kind contributions may obscure each party's relative contributions in the current project); DEPARTMENT OF DEFENSE OFFICE OF INSPECTOR GENERAL AUDIT REPORT NO. 97-114, AWARD AND ADMINISTRATION OF CONTRACTS, GRANTS, AND OTHER TRANSACTIONS ISSUED BY THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (Mar. 28, 1998) (examines 28 research other transactions and recommends that DoD issue guidance requiring DoD activities to document evaluations of cost-share contributions); *Other Transactions: List of 38 Contractors Receiving Section 845 Other Transactions*, FED. CONT. DAILY (BNA) (May 28, 1998) (stating that the Defense Contract Audit Agency is gathering information on 38 recipients of prototype other transactions).

[386] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research & Attachment* at 5 (Mar. 24, 1998).

[387] *Id.*

reasonable."[388] DARPA recently used a strategy called Price As Established (PAE) in the Arsenal Ship[389] prototype other transaction project to ensure a fair and reasonable price for the government.[390] The Price As Established strategy sets a price goal at the beginning of the program to ensure that the program remains affordable.[391] This price goal is a firm acquisition cost threshold and is referred to as the unit sailaway price (USP).[392] Price was defined as "industry

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[388] Under Secretary of Defense for Acquisition and Technology Paul G. Kaminski Memorandum, *10 U.S.C. 2371, Section 845, Authority to Carry Out Certain Prototype Projects* (Dec. 14, 1996) (on file with author).

[389] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED (Dec. 31, 1997) (on file with author). The Arsenal Ship project was a joint program between DARPA and the Navy which began in March 1996. Its basic requirement was to build a ship that would "satisfy joint naval expeditionary force warfighting requirements in regional conflicts by providing the theater commander with massive firepower, long range strike, and flexible targeting the possible theater defense through the availability of hundreds of vertical launch system cells." *Id.* at 3. The program was divided into six phases. Phase I was the concept definition, Phase II was a functional design effort, Phase III was a detailed design and construction of a demonstrator ship, Phase IV was a demonstration and testing phase, Phase V was a production option and Phase VI was a service life support. *Id.* at 5-6. Five teams were awarded Phase I agreements in July 1996 and three teams were awarded Phase II agreements in January 1997. *Id.* at 6. The program was canceled due to lack of funding in October 1997. *Id.* at 7.

[390] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED (Dec. 31, 1997) (on file with author).

[391] *Id.* at 69.

[392] *Id.* at 4. The unit sailaway price is the price one ship will cost when it goes into production. The price goal for the Arsenal Ship that was established before Phase I for the unit sailaway price was $450 million. This means that each ship would cost no more than $450 million. *Id.* at 69. At the end of Phase II the industry teams were required to submit an "irrevocable offer" to build five Arsenal Ships at a fixed price. *Id.* at 18. The dynamics created by this requirement, namely that industry teams had to determine realistic capabilities for the cost they proposed, were to facilitate "true PAE design development and credibility in cost estimating." *Id.* at 19. The fact that this was a contractual commitment made industry teams develop realistic, instead of optimistic, cost estimates. *Id.* at 19. A similar strategy was used in the Global Hawk prototype other transaction project. GEOFFREY SOMMER ET AL., THE GLOBAL HAWK UNMANNED AERIAL VEHICLE ACQUISITION PROCESS: A SUMMARY OF PHASE I EXPERIENCE 17, 25 (RAND, 1997). In that program a unit flyaway price (UFP), of $10 million, was used to set the price goal for an unmanned aerial vehicle. *Id.* at 25. A recent study of the program concluded that "[a]ll contractors felt that the $10 million UFP was a reasonable value and strongly supported the design-to-price philosophy." Id. at 25. *Compare with* American Bar Association Section of Public Contract Law Scott E. Pickens Memorandum & Attachment (Request for Blanket Authority) (Feb. 20, 1998) (recommends six resolutions regarding prototype other transactions including that "[p]arties to an other transaction should not be required to guarantee a fixed (or not to exceed) price for follow on or other quantities until the costs and risks are sufficiently certain to reach such a fixed price for production quantities"); *Debate on Extension of "Other Transactions" Authority*, 39 GOV'T CONTRACTOR (Fed. Pubs. Inc.) 6-7 (Aug. 27, 1997) (raises concerns by

cost to manufacture and a reasonable profit (or return of investment to the company)."[393] The prototype other transaction agreements were structured to allow tradeoffs between cost and performance.[394] The industry teams monitored their designs to ensure their price resulted in an affordable item.[395] The industry teams had the responsibility of making all trade decisions and were encouraged to make trade-offs within the government's desired capabilities.[396] Risk reduction programs were very important to achieving the PAE goals, and industry, facing more risk with this type of strategy, concluded that "zero risk is unaffordable."[397] In the end, the industry teams were prepared to meet the unit

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private sector that the concept of unit sailaway price could make prototype other transactions analogous to the1960s total package procurement initiative and the 1980s fixed price research and development initiative) and Under Secretary of Defense for Acquisition and Technology J.S. Gansler Memorandum, *Fixed Price Contracts for Development With Commercial Companies* (Dec. 8, 1997) (on file with author) (encourages the use of competitive fixed-price contracts under Federal Acquisition Regulation Part 12 for low risk development projects as an avenue to encourage commercial companies to compete for defense projects).

[393] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED 69 (Dec. 31, 1997) (on file with author). The PAE strategy is different from DoD's current Cost as an Independent Variable (CAIV) strategy. CAIV assumes that the government is monitoring and controlling the trade-offs to ensure affordability. CAIV also assumes that cost is only one factor out of many factors. CAIV is the government program manager's "yardstick to consider trades against requirements." *Id.* at 69. *See also* DEPARTMENT OF DEFENSE, DEFENSE SCIENCE BOARD, REPORT OF THE DEFENSE SCIENCE BOARD ACQUISITION WORKFORCE SUB-PANEL OF THE DEFENSE ACQUISITION REFORM TASK FORCE II-17 (Mar. 1998) (recommends expanded use of price-based contracting which is defined as "the establishing of contract price by means other than recourse to costs actually incurred, or costs expected to be incurred) and *Gansler to Charter Group to Study Conversion to Price-Based Buying*, 70 Fed. Cont. Rep. (BNA) No. 3, at 68 (July 20, 1998) (explains that DoD is forming a group to study how the DoD can move toward price-based contracting).

[394] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED 4 (Dec. 31, 1997) (on file with author).

[395] *Id.* at 69. The price goal that was established before Phase I for the unit sailaway price was $450 million. This means that each ship would cost no more than $450 million. *Id.* at 69. At the end of Phase II the industry teams were required to submit an "irrevocable offer" to build five Arsenal Ships at a fixed price. *Id.* at 18. The dynamics created by this requirement, namely that industry teams had to determine realistic capabilities for the cost they proposed, were to facilitate "true PAE design development and credibility in cost estimating." *Id.* at 19. The fact that this was a contractual commitment made industry teams develop realistic, instead of optimistic, cost estimates. *Id.* at 19.

[396] *Id.* at 69.

[397] *Id.*

sailaway price which was about 30% less than what the Navy had originally estimated.[398]

4. Commercial-Like Business Practices

A fourth characteristic of DoD's implementation of other transaction authority is the development of new commercial business practices, including management flexibility and increased trust, between the government and other transaction offerors.[399]

a. Flexible Management and Business Practices

Industry participants cited flexible management practices, including those of both the government program managers and consortium steering committee, as the key element to making an other transaction project effective.[400] The overall technical planning and management of the project are the responsibility of the Consortium Management Committee (CMC).[401] The DoD Program

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[398] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED (Dec. 31, 1997) (on file with author). DARPA says that the PAE strategy is different from DoD's current Cost as an Independent Variable (CAIV) strategy. CAIV assumes that the government is monitoring and controlling the trade-offs to ensure affordability. CAIV also assumes that cost is only one factor out of many factors. CAIV is the government program manager's "yardstick to consider trades against requirements." *Id.* at 69.

[399] *See generally* Ralph C. Nash, *Commercial-Military Integration: The Wave of the Future?*, 7 THE NASH & CIBINIC REP. ¶ 56 (Oct. 1993) (stating that the acquisition system should be changed to permit commercial companies to sell to the Government using its commercial practices).

[400] MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" 10 (NOV. 1995).

[401] DARPA Model Other Transaction Agreement ("Company Model") Article III and DARPA Consortium Model Article III, *in* NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS (Nov. 1997). Article III in both the model other transaction agreement and in the consortium model discuss how the other transaction project will be managed. The Consortium Management Committee (CMC) is composed of one voting representative from each consortium member. The CMC is responsible for managing the consortium including matters involving technical, programmatic, reporting, financial, and administrative issues. Certain decisions are by the CMC are subject to DARPA approval

Manager's responsibilities include attending technical meetings, providing recommendations, and reviewing and verifying any recommendations to change the proposed terms and conditions of the agreement, such as the statement of work or the payment schedule.[402] All technical decisions regarding the project are made by a majority or consensus vote of the CMC and the DoD program manager.[403] Industry participants have found that the Consortium Management Committee empowers the consortium to run like a commercial program.[404] This type of administration results in saving time and money because decisions are made on a timely basis.[405]

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including, changes to the Articles of Collaboration if they substantially change the original relationship of the parties, changes to any DARPA funding to any consortium member, technical or funding revisions to the other transaction agreement, and admission of additional or replacement of consortium members. *Id.* at DARPA Consortium Model, Article III.

[402] DARPA Model Other Transaction Agreement ("Company Model") Article III and DARPA Consortium Model Article III, *in* NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS (Nov. 1997). The Consortium Management Committee (CMC) is responsible for establishing a schedule of quarterly technical meetings between the consortium members and the DARPA program manager. *Id.* at DARPA Consortium Model, Article III. Modifications or changes to an other transaction agreement are addressed in Article III also. *Id.* The administration of an other transaction agreement is discussed in Article IV of DARPA's models and identifies the individuals who are authorized to handle these matters. Administrative and contractual matters are addressed by DoD's Agreements Officer and the Consortium Administrator. Technical matters are addressed by the DoD Program Manager and a representative of the consortium. *Id.* at DARPA Model Other Transaction Agreement and DARPA Consortium Model. *See generally* Defense Advanced Research Projects Agency Memorandum, *Administration of Other Transactions* (undated) available at http://www.arpa.mil/cmo/pages/postaward.html, visited on Nov. 13, 1997 (discusses the role of the Defense Contract Management Command in administering other transaction agreements); Defense Contract Management Command Major General Robert W. Drewes Memorandum, *DCMC Memorandum No. 97-66, Assignment of Other Transactions and Flexible Cooperative Agreements (POLICY)* (July 21, 1997) available at http://www.dcmc.hq.dla.mil/MEMOS/Policy/Policy.htm; http://www.dcmc.hq.dla.mil/CASBOOK/sec10.pdf, visited on June 8, 1998 (explains delegation of assignment for other transactions within Defense Contract Management Command).

[403] DARPA Consortium Model Article III, *in* NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS (Nov. 1997).

[404] MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" 10 (NOV. 1995).

[405] *Id.*

The Arsenal Ship program, discussed previously, is also an example of how the use of an other transaction can result in new management and business practices between the government and industry.[406] In the case of Arsenal Ship, the government personnel were continuously involved with the industry teams design reviews.[407] This involvement facilitated open discussions which resulted in a shorter evaluation period when proposals were submitted.[408]

DoD guidance recognizes that an other transaction requires greater involvement of government program officials with the research aspect of the project.[409] This requires program officials to have knowledge of business matters that have traditionally been the exclusive responsibility of the government contracting officials.[410] Therefore the degree of involvement must be considered when deciding whether or not to use an other transaction.[411]

Other transactions have also allowed government and industry participants to employ flexible commercial-like business practices.[412] This is a

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[406] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED 20-21 (Dec. 31, 1997) (on file with author).

[407] *Id.* at 21.

[408] *Id.* Although the program was canceled after Phase II, it was anticipated that during Phase III a close working relationship would have existed with the winning industry team. This would have included on-site government program officials to answer questions and coordinate program functions with other government activities. "However, the responsibility for defining the best product for the fleet would remain with the Industry Team." *Id.* It should also be noted that government source selection personnel were provided with full access to all parts, including cost and technical information, of the industry teams proposals. Source selection personnel found that this provided a greater understanding of what was being proposed. *Id.* at 30.

[409] Acting Director of Defense Research and Engineering George T. Singley, III Memorandum, *Revision I to Guidance on Instruments for Stimulation or Support of Research* at 4 (Mar. 24, 1998) (on file with the author).

[410] *Id.*

[411] *Id.*

[412] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 23 (Mar. 18, 1996 - June 10, 1996). *See* KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH

direct result of the fact that standard procurement statutes and regulations do not apply to other transactions.[413] The DoD IPT found that this flexible contracting approach and the absence of predetermined contract terms encouraged commercial companies that have not had DoD contracts to do business with DoD.[414]

A study on the Global Hawk Program, which is being conducted under the prototype other transaction authority, found that industry participants unanimously endorsed the benefits of the non-applicability of standard procurement regulations.[415] Without this benefit, the study found that some of the industry participants would not have been able to compete and others that

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WITH NONTRADITIONAL MILITARY SUPPLIERS 44 (RAND, 1997) (concluding that attracting companies that have not traditionally done business with the Department of the Army requires a "commercial-like" manner by the Army including understanding the companies markets and niches, "contracting rapidly, providing minimum oversight, using business plans to define research objectives, and negotiating mutually acceptable intellectual properties") and News Release, Office of Assistant Secretary of Defense (Public Affairs), *ARPA Signs 100 Innovative Agreements Over Five Years*, Sep. 22, 1995 (recognizing that other transactions are based on commercial practices instead of "the sometimes inflexible government policies and standards found in the usual government procurement system and the Federal Acquisition Regulations"); OFFICE OF TECHNOLOGY POLICY, HOLDING THE EDGE: MAINTAINING THE DEFENSE TECHNOLOGY BASE, Summary at 6 (1989) (stating that the various procurement laws and regulations that have been developed to goals other than efficient procurements have required the government to develop business practices that a very different from the commercial world, namely there is an adversary relationship between the buyer and seller, "accountability is stressed over efficiency and price," the government requires visibility into the contractor's business, the government requires specialized accounting practices while placing restrictions on profits and intellectual property).

[413] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 23 (Mar. 18, 1996 - June 10, 1996). *See* News Release, Office of Assistant Secretary of Defense (Public Affairs), *ARPA Signs 100 Innovative Agreements Over Five Years*, Sep. 22, 1995 (recognizing that traditional procurement regulations are not imposed on participants with other transactions but are used as negotiating points).

[414] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 23 (Mar. 18, 1996 - June 10, 1996) available at http://www.safaq.af.mil/acq_ret.

[415] GEOFFREY SOMMER ET AL., THE GLOBAL HAWK UNMANNED AERIAL VEHICLE ACQUISITION PROCESS: A SUMMARY OF PHASE I EXPERIENCE 26 (RAND, 1997). The Global Hawk program is the first program to implement DoD's prototype other transaction authority. *Id.* at 15.

could have competed would have done so at a "significantly higher cost."[416] The study also noted that it was clear the non-applicability of standard procurement regulations "had a major effect in reducing the 'barriers to entry' perceived by the" industry participants.[417]

b. Increased Trust Between Government and Industry

> As in the commercial world, the buyer-seller relationship in the world of defense must be neither adversarial nor conspiratorial; rather, it must be an honest business relationship, with joint interests, in which the buyer gets a good product at a fair cost and the seller makes a decent profit. Unfortunately, while the desirability of such a relationship is fully recognized in the commercial sector, there are many in Congress, in the DoD, in the press, and among the public who are suspicious of its appropriateness in the defense sector. [418]
>
> -- Dr. Jacques S. Gansler

A study which analyzed the willingness of commercial companies that have not traditionally done business with Department of Army to do so, found that the government must establish an environment of trust, including abiding by promises of funding and starting dates, before such companies will do business with the government.[419] Commercial companies operate under the premise that "time to market is critical" and anything that slows this process is "a potential

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[416] *Id.* at 26. Industry participants took advantage of the non-applicability of the standard procurement regulations and set-up streamlined organizations which reduced overhead and general and administrative costs. *Id.*

[417] *Id.*

[418] JACQUES S. GANSLER, AFFORDING DEFENSE 245 (1989).

[419] KENNETH P. HORN ET AL., PERFORMING COLLABORATIVE RESEARCH WITH NONTRADITIONAL MILITARY SUPPLIERS 33 (RAND, 1997).

loss in profit."[420] A significant number of companies interviewed in this study were "particularly concerned that the Army could not keep its 'hands off'."[421]

The DoD IPT found that one of the key differences between DARPA's other transactions and a standard procurement contract was teamwork.[422] The IPT concluded that DARPA and the contractor work together as team, relying more on the contractors' systems, including systems for cost accounting, management of government property, and cost reporting.[423] The IPT observed that cooperative decision-making replaced the standard government termination and dispute clauses.[424] Likewise the Arsenal Ship program observed that

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[420] *Id.*

[421] *Id.*

[422] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 23-24 (Mar. 18, 1996 - June 10, 1996). *See generally* John Cibinic, *Buyer and Seller As A Team: Sleeping With The Enemy?*, 9 THE NASH & CIBINIC REP. ¶ 36 (June 1995) (discussing the importance of cooperation between the Government and its contractors and stating that for the parties to work together as a team they must "understand and respect the legitimate goals of the other" including the Government realizing that "profit is not a dirty word but is the reason for the contractor's being" and the contractor realizing that the "Government is entitled to get the specified work done for the contract price").

[423] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 24 (Mar. 18, 1996 - June 10, 1996) available at http://www.safaq.af.mil/acq_ret.

[424] *Id.* The termination clause in DARPA's model other transaction agreement allows either party to terminate the project by written notice so long as there has been a consultation by the parties prior to the written notice and a determination has been made that the program will not produce beneficial results commensurate with the expenditure of resources. DARPA Model Other Transaction Agreement ("Company Model") Article II *in* NAT'L CONT. MGMT. ASS'N COURSE MANUAL: COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS (Nov. 1997). The clause calls for the government and the consortium to make a good faith effort to resolve outstanding issues. *Id.* If the consortium terminates the project it is only entitled to be reimbursed for the last completed milestone. *Id.* The disputes clause will be used to resolve if the parties fail to reach a reasonable adjustment on the outstanding issues. *Id.* The disputes clause, Article VI, in DARPA's model other transaction calls for the parties to attempt resolving any disputes through discussion and mutual agreement as soon as practicable. *Id.* Absent mutual agreement the parties may document the dispute and present it to the DARPA Deputy Director and a senior executive appointed by the consortium who will make a joint decision thirty days after the other party submits its position. *Id.* In the absence of a joint decision the parties may request a written decision from the Director of DARPA whose decision will be considered final and binding. *Id.* It has been recommended that industry participant's modify this part of the clause so that any decision made by the Director of DARPA is reviewable in the federal courts. Carl L. Vacketta et

minimal government direction and open dialogue with industry throughout the program resulted in "[s]ignificant trust and mutual respect" between the government team and the industry teams.[425]

Finally, industry participants concluded that they did not see any additional risk for fraud, waste, and abuse when using an other transaction agreement.[426] The participants found that the characteristics of other transactions, namely their flexibility, use of consortium, and cost-sharing requirements, provide effective mechanisms to achieve accountability."[427]

C. *Implementation Challenges*

As DoD continues to implement this authority it will face challenges from both inside and outside the government. Therefore, DoD's implementation of this authority will determine its success. The first and foremost challenge is that the use of this authority presents a cultural change for individuals who have grown-up in the fifty year old government procurement system.[428] Studies that

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al, *Other Transactions*, BRIEFING PAPERS, Mar. 1998, at 10. To ensure this the clause should provide that "any decision is subject to the Wunderlich Act, which precludes contract clauses from preventing judicial review of an agency decision on a dispute." *Id.* at 10. *See* 10 U.S.C. §§ 321, 322. *See generally* John Cibinic, *Buyer and Seller As A Team: Sleeping With The Enemy?*, 9 THE NASH & CIBINIC REP. ¶ 36 (June 1995) (recommending that differences between the Government and its contractors "should be resolved as the work progresses").

[425] DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, DEPARTMENT OF THE NAVY, ARSENAL SHIP PROGRAM OFFICE, ARSENAL SHIP: LESSONS LEARNED 9 (Dec. 31, 1997) (on file with author). The GAO was not an available forum for protests regarding the Arsenal Ship program. *Id.* at 14. As a result the program office observed that this "greatly improved the ability of the Government to support and communicate with the individual Teams." *Id.* It also observed that a protest to the Agency or to a federal court was "deemed more predictable and less threatening than the GAO process." *Id.*

[426] MICHAEL S. NASH ET AL., INSTITUTE FOR DEFENSE ANALYSIS, PARTICIPANT VIEWS OF ADVANCED RESEARCH PROJECTS AGENCY "OTHER TRANSACTIONS" 20 (NOV. 1995).

[427] *Id.* at ES-2.

[428] *See generally* F. Trowbridge vom Baur, *Fifty Years of Government Contract Law*, 29 FED. B. J. 305 (1970) (discussing the history of the government procurement laws and regulations);

have been conducted on the impact of cultural change on DoD acquisition reform initiatives provide lessons for the implementation of other transactions because other transactions is an acquisition reform initiative for acquiring research and development.[429]

A study in 1997[430] found that cultural resistance has been the biggest barrier to the implementation of acquisition reform initiatives.[431] The study found that some of the cultural resistance to this implementation was caused by a lack of knowledge or understanding of the benefits of the specific change.[432] The result of this lack of understanding is to resist the change.[433] The study's participants recognized that trust is a necessity for a successful relationship between the government and industry.[434] The study's participants also

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Ralph C. Nash, *Commercial-Military Integration: The Wave of the Future?*, 7 THE NASH & CIBINIC REP. ¶ 56 (Oct. 1993) (stating that [m]assive oversight is the culture, and there is no other).

[429] Joseph Lovece, *Pentagon Agency Gets Serious About Acquisition Reform*, Def. Wk., July 11, 1994, at 1, 12, 15; News Release, Office of Assistant Secretary of Defense (Public Affairs), *ARPA Signs 100 Innovative Agreements Over Five Years*, Sep. 22, 1995.

[430] Coopers & Lybrand conducted a survey of ten leading U.S. defense contractors which assessed the implementation of acquisition reform initiatives in DoD contracts. COOPERS & LYBRAND, ACQUISITION REFORM IMPLEMENTATION: AN INDUSTRY SURVEY 2 (Oct. 1997), http://www.acq.osd.mil/ar/clreport.htm, visited on Jan. 31, 1998. The study found that there was a moderate level of implementation of DoD's acquisition reform initiatives (2.9 on a 4.0 scale) and that cost savings were being realized from acquisition reform. *Id.* at 3-4.

[431] COOPERS & LYBRAND, ACQUISITION REFORM IMPLEMENTATION: AN INDUSTRY SURVEY 21 (Oct. 1997), http://www.acq.osd.mil/ar/clreport.htm, visited on Jan. 31, 1998. The study pointed out that this cultural resistance should be mostly as government resistance rather than contractor resistance. *Id.* The study defined the term cultural resistance "as an implicit aversion to change, either institutional or individual. It is about environment and mindset rather than process. It concerns, in some cases, job security or preservation of technical cognizance, i.e., 'rice bowls.' It is an absence of conditions that made change possible." *Id.* at 21-22.

[432] *Id.* at Appendix B.

[433] *Id.*

[434] *Id.* at 23.

emphasized the importance of training the government work force on commercial pricing techniques.[435]

Another report, by three military officers, presents a model for change which could assist DoD leadership in implementing acquisition reform initiatives.[436] The report observed that if DoD,

> wants to successfully change the way it does business, it must identify an approach for success and stay the course to completion. This is no different than a major corporation deciding to change their way of doing business in order to survive. While in the Department of Defense the motivating factors may be different, the overall change implementation process is similar.[437]

The report recommended that DoD leadership should be at the core of DoD's change model.[438] Leadership must be involved at all levels in order to bring about successful change. One of the report's authors' observed that "'[t]his is about people. Not processes, programs, etc. If you want to change the culture, you have to get the leaders redirected; get the people redirected.'"[439]

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[435] *Id.* at 24. The study's participants see the move from cost-based pricing to commercial pricing as one of the most important parts of acquisition reform. *Id. See* Ralph C. Nash and John Cibinic, *Dateline May 1998*, 12 THE NASH & CIBINIC REP. (May 1998) In this article Professors Nash and Cibinic discuss the findings of a DoD inspector general report regarding the purchase of spare parts. They conclude that DoD is on track with identifying the problem, namely that it is "not the system but the workforce." They recommend retraining the workforce "to use price analysis instead of cost analysis." They also recommend that the government establish exchange programs with commercial companies so that the government workforce can see the challenges faced by commercial buyers. *Id.*

[436] LIEUTENANT COLONEL CHARLES L. BECK, JR., ET AL., A MODEL FOR LEADING CHANGE: MAKING ACQUISITION REFORM WORK ix (Dec. 1997).

[437] *Id.* at 1-5. *See generally* U.S. Congress, Office of Technology Assessment, *Holding the Edge: Maintaining the Defense Technology Base, Volume II, Appendixes* at 5-8, OTA-ISC-432 (Jan. 1990) (discusses some of the differences between the government and private sector which must be taken into account by the government when attempting to apply lessons from the private sector).

[438] LIEUTENANT COLONEL CHARLES L. BECK, JR., ET AL., A MODEL FOR LEADING CHANGE: MAKING ACQUISITION REFORM WORK 4-4 (Dec. 1997).

[439] *Id.* at 4-6, 6-2.

The report recommends that the "message must get to the workforce, unfiltered."[440] The report found that the acquisition workforce believes that reform is necessary.[441] However, the workforce needs a plan that empowers it to make changes and that includes tools for it to use to execute the plan.[442]

The DoD IPT also recommended that in order to encourage the military departments to use other transactions, the departments need "to support proper use" and "[t]his support needs to be done from the top down."[443] Other recommendations made by the DoD IPT to encourage the military departments use of other transactions included consistent training throughout DoD on the proper use of other transactions, creation of a central collection and dissemination point for lessons learned from the use of other transactions, general guidance on the use of prototype other transaction authority, and that DoD activities should use metrics to measure the use and value of using other transactions.[444]

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[440] *Id.* at 6-2.
[441] *Id.* at 8-7.
[442] *Id.* at 8-7. *See also* Ralph C. Nash, *An Efficient Procurement System*, 9 THE NASH & CIBINIC REP. ¶ 30 (May 1995) (stating that "an essential ingredient of a new procurement system is a highly competent workforce that is free to exercise its best judgment in getting the job done" and that "both contractors and Government employees must be fully accountable for performing at a high level of competence and integrity"); John Cibinic, *Can Procurement Be Both Fair and Efficient?*, 9 THE NASH AND CIBINIC REP. ¶ 2 (Jan. 1995) (stating that attempts to "bundle up integrity, common sense, and good judgment into a set of statutes and regulations" has not resulted in fairness or efficiency and that procurement officials performance should be not be evaluated on whether or not they followed detailed procedures (i.e. the process) but whether or not they do a good job (i.e. results)).
[443] DEPARTMENT OF DEFENSE, FINAL REPORT OF THE INTEGRATED PRODUCT TEAM ON THE SERVICES' USE OF 10 U.S.C. 2371 'OTHER TRANSACTIONS' AND 845 PROTOTYPE AUTHORITIES 6 (Mar. 18, 1996 - June 10, 1996) available at http://www.safaq.af.mil/acq_ret.
[444] *Id.* at 6-7. *See* JOSEPH T. BOLOS, A REPORT ON THE USE OF 10 U.S.C. 2371 "OTHER TRANSACTION" AUTHORITY AND 10 U.S.C. 2371 SECTION 845 PROTOTYPE AUTHORITY IN THE DEPARTMENT OF DEFENSE 58 (Mar. 1997) (explaining that government training currently provided

Professor Steven Schooner concluded, from a review of authors who write about change, that,

> [R]eal change requires leadership, vision, commitment, and perseverance. Merely changing the rules will not change the bureaucracy. True cultural change will require more than the mandated empowerment of government employees to exercise discretion. Unless government leaders instill confidence in (and dispel fear of reprisal against) those government actors, we cannot expect that discretion to be exercised.[445]

Professor Schooner also pointed out that "procurement officials must be willing to take certain risks, while supervisors and policymakers must be willing to tolerate some mistakes."[446]

Another challenge will be working through the traditional defense contractors reaction to the use of other transactions for acquiring research and development, which includes increased competition.[447] The fact that, with other transactions, standard procurement statutes and regulations do not apply

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to its workforce is not adequate for addressing the unique problems which arise during negotiation of other transactions that involve consortiums).

[445] Steven L. Schooner, *Change, Change Leadership, and Acquisition Reform*, 26 PUB. CONT. L.J. 467, 479 (1997).

[446] Steven L. Schooner, *Change, Change Leadership, and Acquisition Reform*, 26 PUB. CONT. L.J. 467, 479 (1997). Professor Schooner states that the idea of tolerating mistakes that result from risk taking is a predominant theme in the books written about change. *Id.*

[447] It was observed in a recent article on the Technology Reinvestment Project (TRP), which supported the development of dual-use technology through the use of other transaction agreements, that the defense industry did not lobby for its reenactment. Linda R. Cohen, *Dual-Use and the Technology Reinvestment Project, in* INVESTING IN INNOVATION: CREATING A RESEARCH AND INNOVATION POLICY THAT WORKS 187 (1998). The defense industry's lack of enthusiasm for the type of industrial restructuring attempted by TRP, namely the use of cost sharing, consortium or team projects, emphasis on industry management and project definition, was understandable because it was "in direct conflict with the profit incentives of military contractors." *Id.* "The goals of TRP implied a revision of the structure of the defense contracting industry from one in which contractors had few competitors and could charge high prices to one with competitive pressures and rock-bottom, no-profit prices." *Id.* Although the author makes several specific recommendations on how the government could address this issue, her overall recommendation is that the government must align the goals of future dual-use programs with the incentives of the industries it is trying to target. *Id.* at 191.

potentially increases DoD's ability to achieve much broader competition when acquiring research and development. Competition has been a long standing focus of government procurement.[448] However, it appears that unique government requirements[449] have unintentionally created a situation of "bounded"[450] competition, which places those companies that have the systems in place to meet the government's unique requirements in the best position to participate in government acquisitions. The fact that DoD's competition involves pre-positioned contractors, namely those who have set-up compliant practices and procedures which accommodate the government's regulatory impositions, and the fact that this traditional defense industry is shrinking, leaves DoD with a select number of competitors for its acquisitions. No company welcomes competition. However, what remains to be decided is whether or not it is in DoD's best interest to have bounded or broader competition. The policy challenge for DoD is to balance its needs against this reality.

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[448] *See* Under Secretary of Defense for Acquisition and Technology J.S. Gansler Memorandum, *Fixed Price Contracts for Development With Commercial Companies* (Dec. 8, 1997) (on file with author) (explains that as a result of defense industry consolidation DoD is left with only two competitors for some of its requirements and that DoD can increase its competition by reaching out to "creative" companies that do not normally do business with DoD and sets forth a strategy to do this).

[449] *See generally* GEN. ACCT. OFF., REPT. NO. GAO/NSIAD-94-20, *Acquisition Requirements: Impact on Company Structures and Operations* (Apr. 1994) (discusses how seven of the eight contractors surveyed maintain separate administrative structures in order to do business with the DoD); DEBRA VAN OPSTAL, THE CENTER FOR STRATEGIC & INTERNATIONAL STUDIES, INTEGRATING COMMERCIAL AND MILITARY TECHNOLOGIES FOR NATIONAL STRENGTH: AN AGENDA FOR CHANGE (Mar. 1991) (identifies barriers, some of which include the government's accounting requirements and audits and technical data rights, to and recommends a strategy for civilian/military integration).

[450] This term was coined by Mr. George B. Prettyman, Esquire.

D. *Summary*

DoD's implementation of its other transaction authority has been incremental. The military departments were initially reluctant to use the authority because of DoD's bureaucracy. However, DoD's 1997 report to Congress clearly shows that the military departments as well as some of the defense agencies are committed to using this new authority.

The characteristics, including flexibility, teaming, cost-sharing, and commercial-like business practices, which have emerged through DoD's implementation of this authority illustrate that other transaction agreements allow DoD to acquire the research and development it needs. The other transaction entered into between DARPA and Hewlett-Packard exemplifies the necessity for this authority. As the United States' research and development base becomes, some would argue it already is, primarily commercial, it will be incumbent on DoD to acclimate itself to this reality. Other transactions provides a vehicle to allow DoD to operate within a primarily commercial R&D world. However, the use of the other transaction vehicle will require a cultural change within DoD. Finally, in order for the implementation of this authority to be successful, it must be supported by all levels of DoD leadership and it must focus on the people, namely the cultural change that they are and will continue to experience.

V. Conclusion – Meeting The Department of Defense's Objectives

DoD's current challenge is to develop an acquisition strategy which addresses the realities of a shrinking defense budget, a shrinking defense industry, and a shifting research and development technology base, namely one that was primarily supported with federal funds to one that is primarily supported with private funds, and which furthers DoD's objectives for science and technology, acquisition reform and civil/military integration. This paper has discussed one authority, other transactions, which could become an effective tool for DoD's acquisition strategy to address these realities and further DoD's objectives. In so doing, this paper attempted to answer three questions, specifically: Why did DoD end up with other transaction authority? Is it necessary? What is its future?

The answer to the first and second questions, broadly speaking, appears to be that DoD obtained this authority as a means to meet its national security requirements as set-out in various objectives. Those objectives, including objectives for science and technology, acquisition reform and civil/military integration, raise challenges for DoD's acquisition strategy. In order for DoD to obtain its goal of maintaining technological superiority, it must recognize that the majority of cutting-edge research and development is in the private sector. In addition, DoD must recognize that gaining access to the technology it needs to carry out its national security mission requires a different acquisition strategy.

Likewise one of the challenges posed by DoD's objective to achieve a "faster, better, cheaper" acquisition process is DoD's cumbersome regulatory regime. Finally, DoD's objective to create one industrial base poses the challenge of DoD having access to acquisition strategy tools which will allow commercial entities, that do not have in place the requisite systems for a government acquisition, to participate in DoD's research and development acquisitions. These objectives and the challenges they pose appear to be an impetus, both to DoD's obtaining other transaction authority and to the authority's necessity.

The answer to the third question, what this authority's future is, depends on several factors. However, one of the main factors that will determine the future use of other transaction authority will be the ability of the people using the authority to change. The implementation of this authority is an example of the challenges faced by DoD when it tries to change how people do things. It is clear from the characteristics that have emerged, namely flexibility, teaming, cost-sharing, and commercial-like business practices, that the use of other transaction authority imposes a cultural change on DoD and the traditional defense contractors. Good leadership which provides support, through training and commitment, to those using this authority, will go along way in overcoming this challenge.

Restraint from regulation is another factor that will determine the future of DoD's other transaction authority. As discussed an other transaction is a

contract without the imposition of traditional unique government procurement requirements. Regulation of this authority in a manner similar to standard procurement contracts could undermine its benefits and its ability to meet DoD's objectives and to address the realities of shrinking budgets and a shifting research and development technology base.

In conclusion, other transactions are proving that they allow DoD to acquire the research and development it needs efficiently and at an affordable price. They allow flexibility which enhances competition. They focus on affordability through cost-sharing. They ensure system usability by involving DoD's client, the warfighter. Finally, other transaction authority provides an opportunity for DoD's acquisition policy to be consistent with and to achieve DoD's objectives. If properly implemented it could prove to be one of DoD's biggest successes for the warfighter.