

“Other Transactions” with Uncle Sam: A Solution to the High-Tech Government Contracting Crisis

By David S. Bloch* and James G. McEwen**

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* Gray Cary Ware & Freidenrich LLP, Palo Alto, California; B.A. (ΦBK), Reed College; M.P.H., The George Washington University School of Medicine and Health Sciences; J.D. with honors, The George Washington University National Law Center; Fellow in International Trade Law, University Institute of European Studies, Turin, Italy. Mr. Bloch was formerly a research assistant at the Government Contracts Program in Washington, D.C.

** Staas & Halsey LLP, Washington, D.C.; B.S.A.S.E., The University of Texas at Austin; J.D. with honors, The George Washington University National Law Center. Mr. McEwen was formerly an intellectual property attorney with the Naval Surface Warfare Center, Carderock Division, and the Naval Air Systems Command, specializing in the procurement and management of intellectual property. The opinions expressed in this article do not represent the official positions of the authors’ respective employers or former employers. The authors wish to thank Kathryn McEwen for her invaluable editorial and bluebooking aid.

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I. Introduction

Through no fault of its own, the federal government is being left behind. High technology is the driving force behind America's sustained economic growth, and companies that specialize in high tech are increasingly global in both scope and reach. U.S. markets are growing at near-exponential rates; new economies are opening to American goods under the influence of free-trade groups like the World Trade Organization; even with the downturn, inventive activity in places like Silicon Valley and the Dulles Corridor proceeds at a feverish clip. Where government contracts were once the driving force behind many of our cutting-edge technologies (including, notably, the internet), the Department of Defense and other research-intensive government agencies (NASA, the Department of Energy, *etc.*) face a shrinking contractor community and a continuing inability to entice new and growing technology companies to bid for defense and research-oriented government work.¹

This is not to say that the Government is not a promising target for off-the-shelf products or for internet services: "E-government is the next hot opportunity for e-commerce solution providers, with newcomers vying to give established Beltway players a run for Uncle Sam's money."² The Government's demand is growing as well: "The market for business-to-government e-commerce solutions will reach \$6.2 billion by 2005, up from a projected \$1.5 billion this year,"³ while the overall demands of the Department of Defense are now projected to reach \$500 billion by 2005.⁴ In addition, the Government's, and more specifically the Department of Defense's, need to build new weapons systems remains intact—and indeed has expanded substantially since the terrorist attacks of September 11, 2001.⁵ There is also a growing need to find ways to maintain existing "legacy"

¹ UNDERSECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS, INTELLECTUAL PROPERTY: NAVIGATING THROUGH COMMERCIAL WATERS, at 1 (Version 1.1) (Oct. 15, 2001), available at <http://www.acq.osd.mil/ar/resources.htm> (quoting Kathy Chen, *Pentagon Finds Fewer Firms Want to do Military R&D*, WALL ST. J., Nov. 2, 1999, at A20). See also, Roger Haag, *10 U.S.C. § 2553: Government/Industry Partnering—Fitting A Square Peg Into A Round Hole*, 30 PUB. CONT. L.J. 243 (2001).

² Darryl K. Taft, *The Next E-Target: Uncle Sam*, COMPUTER RESELLER NEWS, at <http://www.crn.com/components/search/Article.asp?ArticleID=15996>.

³ *Id.*

⁴ Keith Naughton, "Lock And Download," *Military Contractors Are Thriving as the Pentagon Ponies Up for Speedy Delivery of High-Tech Weapons*, NEWSWEEK, Oct. 22, 2001, available at <http://msnbc.com/news/642533.asp> (last visited Oct. 15, 2001).

⁵ See UNITED STATES DEPARTMENT OF DEFENSE, NEWS RELEASE NO. 049-02, DETAILS OF FISCAL 2003 DEPARTMENT OF DEFENSE (DOD) BUDGET REQUEST (February 4, 2002), available at http://www.defenselink.mil/news/Feb2002/b02042002_bt049-02.htm.

systems and to lower overall ownership costs for both new and existing systems. But the government-contractor community is shrinking. For this reason, the Department of Defense is increasingly turning to the commercial contracting community to find solutions to these problems.⁶

At the same time, high-technology companies are no longer able to rely on purely commercial revenue streams to remain viable. Specifically, smaller high-technology companies are discovering that venture capital goes only so far in supplying sufficient resources to develop cutting edge technologies. Moreover, larger high-technology companies that previously relied almost exclusively on non-government customers are finding it increasingly difficult to remain viable as their customer base shrinks in a tighter economy. As such, traditional high-tech companies are looking to non-traditional means of developing tomorrow's technologies.⁷

What is to be done? The answer lies in the laws governing intellectual property.

Intellectual property law rests on the fundamental assumption that strong property rights encourage maximum exploitation of resources. “Lease a man a garden, and in time he will leave you a patch of sand. Make a man a full owner of a patch of sand and he will grow there a garden on the sand.”⁸ The concept of limited exclusivity as a spur to invention has long historical precedents. The Greek colony of Sybaris granted exclusive rights to inventions as early as 500 B.C.,⁹ and a 1474 law provided for patent rights in Republican Venice.¹⁰ The Founding Fathers granted Congress the power “To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries,”¹¹ and implemented this authority with the original Patent Act in 1790.¹² Abraham Lincoln, himself a patentee, observed in 1859 that “[t]he patent system added the fuel of interest to the fire of genius.”¹³

⁶ UNDERSECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS, MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS, DIRECTORS OF DEFENSE AGENCIES: SUBJECT: “OTHER TRANSACTION” AUTHORITY FOR PROTOTYPE PROJECTS (Dec. 21, 2000). It is also interesting to note that this is not a new trend, since the Government has long been interested in methods for better utilizing its intellectual property to foster commercial markets. See FEDERAL COUNCIL FOR SCIENCE AND TECHNOLOGY, REPORT ON GOVERNMENT PATENT POLICY, at 1 (Combined Dec. 31, 1973, Dec. 31, 1974, Dec. 31, 1975, Sept. 30, 1976) (summarizing the various patent policies with regard to rights in contractor inventions evaluated in light of the need for commercialization of these inventions by industry). See also, W. Henry Lambright, *Government, Industry, And The Research Partnership: The Case Of Patent Policy*, PAT. L. REV., 111-24 (1969).

⁷ Naughton, *supra* note 4.

⁸ GEORGE GLIDER, *THE SPIRIT OF ENTERPRISE* 26 (1984).

⁹ HERBERT F. SCHWARTZ, *PATENT LAW & PRACTICE* 1 (3d ed. 2001).

¹⁰ Guilio Mandich, *Venetian Origins of Inventors' Rights*, 42 J. PAT. & TRADEMARK OFF. SOC'Y 378, 381 (1960).

¹¹ U.S. CONST. art. I, § 8, cl. 8.

¹² Act of Apr. 10, 1790, ch. 7, 1 stat. 109.

¹³ Quoted in SCHWARTZ, *supra* note 9, at 3.

The federal government has a variety of statutes aimed at encouraging inventive activity by protecting intellectual property rights. Artistic works (and, perhaps anomalously, computer software) are protected by copyright laws.¹⁴ Trademarks are protected by the Lanham Act.¹⁵ “True” inventions are protected by patent law,¹⁶ and lesser innovations enjoy a patchwork of protections: the Design Patent Act,¹⁷ the Plant Patent Act,¹⁸ the Boat Hull Vessel Design Act,¹⁹ the Mask Works Act,²⁰ and so on. Research and development is generally tax-deductible, and government grants fund the lion’s share of basic research in the United States.²¹

The Government consumes an extraordinary amount of intellectual property—in weapons systems, computer software, health care research by the Veterans’ Administration and the National Institutes of Health, and the like. It is a much more flexible business partner than most companies think, yet it is unable to entice the best private companies into government contracts. Part of the problem is that published government policies and pronouncements throughout the developed world are schizophrenic when it comes to intellectual property rights. Though many statutes here and abroad encourage innovation and fairly distribute patent rights, those same governments endorse ideas that are deeply inimical to the entire idea of intellectual property.²² According to the United Nations, “[t]he relentless march of intellectual property rights needs to be stopped and questioned.”²³ Small wonder, then, that technology companies are wary of offering their technologies to the State.

The United States Government, in particular, has a strong incentive to encourage inventive activity and to actively seek private contractors from which to buy new technologies. Such technologies maintain American military and economic supremacy in an increasingly fragmented world.²⁴ It is fairly clear that the United States does not, as a matter of governmental policy, endorse the idea that

¹⁴ 17 U.S.C. §§ 101 *et seq.* (1994).

¹⁵ 15 U.S.C. §§ 1125 *et seq.* (1994).

¹⁶ 35 U.S.C. §§ 101 *et seq.* (1994).

¹⁷ 35 U.S.C. §§ 171 *et seq.* (1994).

¹⁸ Plant Variety Protection Act, Pub. L. No. 91-577, 84 Stat. 1542 (1970); Plant Variety Protection Act Amendments of 1994, Pub. L. No. 103-349, 108 Stat. 3136.

¹⁹ 17 U.S.C. §§ 1301 *et seq.* (1994).

²⁰ 17 U.S.C. §§ 901 *et seq.* (1994).

²¹ Gina A. Kuhlman, *Alliances for the Future: Cultivating a Cooperative Environment for Biotech Success*, 11 BERKELEY TECH. L.J. 311, 333-34 (1996).

²² A review of the European Community’s approach to ownership of intellectual property with regard to inventions made with government sponsorship is attached as an Appendix.

²³ UNITED NATIONS DEVELOPMENT PROGRAMME, HUMAN DEVELOPMENT REPORT 1999, at 73 (1999).

²⁴ It is also clear that the Government views intellectual property as an important mechanism for promoting such domestic industry, as evidenced by domestic manufacturing requirements and the like. 35 U.S.C. § 204; UNDERSECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS, INTELLECTUAL PROPERTY: NAVIGATING THROUGH COMMERCIAL WATERS, at 1 (Version 1.1) (Oct. 15, 2001).

intellectual property is a threat. In light of the Government’s difficulty in attracting high technology partners, however, current policies may not go far enough.

This paper surveys the history of intellectual property in government contracts and discusses the important differences between private-sector and government approaches to intellectual property rights. We conclude that the Department of Defense’s current “Other Transactions” authority, which allows the Government to negotiate with private sector companies on an equal footing and without the interference of complex procurement regulations, should be extended to other phases of procurement with the Department of Defense, applied more broadly to the rest of the government, and promoted as a new contracting model for Twenty-First Century partnerships between government and industry.

II. Government-Developed Intellectual Property and Technology Transfer Policies

A. Government as Developer of Intellectual Property Rights

The Government is a major developer of high technology. In-house government scientists regularly generate new techniques or processes, and government-funded contracts commonly result in protectable inventions.²⁵ Since the 1980s, the Government has actively sought to transfer technologies developed in the course of government contracts to the private sector.²⁶ Promoting “the commercialization and public availability of inventions made in the United States by United States industry and labor” is an explicit goal of Government technology procurement.²⁷

²⁵ See, e.g., Don Allen Resnikoff, *Federally Funded Stem Cell Research: A Good Deal for the Taxpayer and Consumer?*, 14 LOY. CONSUMER L. REV. 36, 37 (2001) (discussing the controversy over the “current U.S. government policy of patenting medically significant biological inventions developed by government scientists or funded with federal money”).

²⁶ See, e.g., Thomas N. Bulleit Jr., *Public-Private Partnerships in Biomedical Research: Resolving Conflicts of Interest Arising Under the Federal Technology Transfer Act of 1986*, 4 J. L. & HEALTH 1, 4-6 (1989/1990) (explaining that the Stevenson-Wydler Technology Innovation Act of 1980 and the Bayh-Dole Patent and Trademark Amendments of 1980 “represented a major shift in congressional policy toward the permissible uses of technology conceived or first reduced to practice with federal funds. Under Stevenson-Wydler, the federal government adopted at least a general policy supporting the transfer, where appropriate, of federal technology to private industry and state and local governments which could be anticipated to use it in advancing technological innovation. Under the Bayh-Dole Amendments, this policy began to take shape, as certain elements of the private sector—small business and nonprofit organizations—received an extra incentive to apply for government grants or contracts, or otherwise invest in research also funded in part by the federal government.”); James V. Lacy, Bradford C. Brown, & Michael A. Rubin, *Technology Transfer Laws Governing Federally Funded Research and Development*, 19 PEPP. L. REV. 1, 10-11 (1991).

²⁷ 35 U.S.C. § 200 (1994). See Samuel I. Doctors, *Transfer of Space Technology to the American Consumer: The Effect of NASA’s Patent Policy*, 52 MINN. L. REV. 789, 793 (1968). However, today the National Institutes of Health is being touted as a relative success story through the use of its aggressive licensing of government-owned patents and material transfer agreements. See GAO/ REPORT NO. GAO/RCED-99-173, TECHNOLOGY TRANSFER: NUMBER AND CHARACTERISTICS OF INVENTIONS LICENSED BY SIX FEDERAL AGENCIES, at 6 (June 1999) (National Institutes of Health accounted for 95.1% of all federal licensing of patented technology). See, e.g., 42 U.S.C. § 2451(c) (1994) (NASA is expected to “seek and encourage . . . the fullest commercial use of space.”); 42 U.S.C. §§ 5905(b)(3)(A), 7112(6) (1994) (requiring the Department of Energy to encourage the development of renewable energy resources and conservation technologies). Historically, NASA has been

The original impetus for these “technology transfer” efforts was the perceived competitive advantages enjoyed in the 1970s by Japanese and, to a lesser extent, German companies.²⁸ (The same concerns led to the creation of the Federal Circuit.²⁹) In both countries, governments play an active role in funding technological development. Experience now shows that the Japanese and German government-industrial models are less supple and less efficient than the market-oriented American system.³⁰ Nevertheless, the impulse to commercialize government inventions remains, with the main debate being the precise mechanism by which this is accomplished.

Commercialization can take place in at least two ways: the Government can license-out or sell acquired intellectual property rights, or it can commercialize inventions itself. A hybrid approach allows public-private partnerships (*e.g.*, Sematech),³¹ public corporations (the U.S. Postal Service), or specially-designated private corporations (Network Solutions, Inc.). The distinction is important: “The ways that patented inventions are licensed to transfer technology (that is, exclusively, nonexclusively, or perhaps through a lottery) may be as important as encouraging product development as when a specific invention . . . is patentable.”³²

There is no definitive study as to whether the United States Government is effectively using the nation’s intellectual property, though some research suggests that “universities and government agencies achieved royalty rates in licensing-out activities comparable or somewhat higher than their commercial counterparts.”³³ It

among the most successful transferors of government technology. *See also* the Stevenson-Wydler Technology Innovation Act, 15 U.S.C. §§ 3701 - 3717, which encourages technology transfer by federal laboratories and research facilities. Specific federal agencies have also been charged with commercializing technologies within their areas of core competence.

²⁸ “Technology transfer . . . originated during the late 1970s, when the nation began seriously to perceive that its competitive position was eroding, vis-à-vis Japan, and, to a certain extent, European countries, notably Germany.” W. Bruce Shirk, *Technology Transfer and Technology Reinvestment—A Comparison of Two Statutory Frameworks*, 41 FED. B. NEWS & J. 64, 64 (1994); WILLIAM S. DIETRICH, IN THE SHADOW OF THE RISING SUN 1-11 (1991).

²⁹ SCHWARTZ, *supra* note 9, at 5.

³⁰ It is interesting to note that the German Government is now considering legislation mirroring the Bayh-Dole Act, 35 U.S.C. §§200-212 (1994). The proposed legislation (in German) can be found at Plenarprotokoll 14/170 17/05/2001 S. 16684C-D, 16702D-16709A/Anl Beschluss: S. 16684D-Meiberweisung: Rechtsausschuss (federführend), Ausschuss für Bildung, Wissenschaft, Forschung, Technologie und Technikfolgenabschätzung.

³¹ Sematech is a research and development consortium composed of leading U.S. semiconductor companies and funded in part by the Department of Defense. *See* Rob Pivnick, *Do Antitrust Laws Hinder American Technological Innovation?* 64 J. AIR L. & COM. 1257 (1999); Thomas A. Piraino, Jr., *Reconciling Competition and Cooperation: A New Antitrust Standard for Joint Ventures*, 35 WM. & MARY L. REV. 871, 912 (1994).

³² Reid G. Adler, *Genome Research: Fulfilling the Public’s Expectations for Knowledge and Commercialization*, 257 SCIENCE 908, 910 (1992).

³³ Daniel M. Gavock, David A. Haas, & Michael P. Patin, *Licensing Practices, Business Strategy, and Factors Affecting Royalty Rates: Results of a Survey*, 13 LICENSING L. & BUS. REP. 205, 215 (1991).

appears, then, that Government is an effective developer of intellectual property rights.

B. Government as Acquirer of Intellectual Property Rights

The Government also obtains intellectual property rights from third parties with whom it contracts. Under most circumstances, the Government retains residual intellectual property rights in inventions created under government contracts.³⁴ It is intuitively appealing to think that the Government should retain patent rights in the inventions it funds. In every other industry, if the employer pays someone to develop a product, the employer retains the rights. From the perspective of a taxpayer, it seems eminently reasonable that money spent by the taxpayers to develop a technology should not go to waste, nor should taxpayers end up paying at the store for technology they helped fund.³⁵

The trend, however, has been away from government ownership of patents and toward a model under which third-party contractors retain intellectual property rights in inventions created under government contracts.³⁶ “The Government now presumes that ownership of patent rights in government-funded research will vest in any contractor that is a party to the funding agreement.”³⁷ The policy favoring private ownership of intellectual property developed in part at Government expense “has been consistently hailed as an unqualified success in stimulating the commercial development of discoveries emerging from government-sponsored research in universities.”³⁸ Professors Nash and Rawicz observe:

There has been a recurring policy debate on the rights the Government should acquire in inventions made during the performance of its contracts and grants. In broad perspective, these rights can be conceived of as two—the right to use the invention in undertaking Government programs and the right to use the invention for commercial purposes. There has never been any serious debate over the first right which requires the inventor to give the Government a royalty-free license

³⁴ Federal Acquisition Regulation, 48 C.F.R. § 27.302 (June 25, 2001).

³⁵ This does not address the special case of defense technologies, which are held by the government for reasons of national security. *See, e.g.*, 35 U.S.C. § 181 (1994) (which authorizes the Government to withhold a patent and issue a binding secrecy order on any invention whose disclosure “might . . . be detrimental to the national security.”). *See also* 42 U.S.C. § 2182 (1994) (which imposes restrictions on the patentability of inventions “useful in the production or utilization of special nuclear material or atomic energy.”). Note that an inventor whose patent is suppressed under 35 U.S.C. § 181 (1994) is able to obtain compensation from the Government. 35 U.S.C. § 183 (1994).

³⁶ Indeed, it is possible that the Government does not need intellectual property rights at all. The taxpayers get their money’s worth when the government obtains the technology it needs. Abandoning patent rights might well reduce the costs of Government contracting—and it would certainly give the private sector a greater incentive to pursue Government contracts. Beyond that, one can argue that any economic “multiplier” caused by private-sector applications of government technology ultimately benefit the broader economy.

³⁷ Kevin W. McCabe, Note, *Implications of the CellPro Determination on Inventions Made with Federal Assistance: Will the Government Ever Exercise Its March-In Right?*, 27 PUB. CONT. L.J. 645, 650 (1998).

³⁸ Rebecca S. Eisenberg, *Public Research and Private Development: Patents and Technology Transfer in Government Sponsored Research*, 82 VA. L. REV. 1663, 1708 (1996).

to use these inventions for its own programs. However, there has been a long-standing controversy over whether the Government should insist on taking the commercial rights to such inventions for the benefit of the public. If the Government acquires full title to the invention, it also obtains the rights to use the invention for commercial purposes; while if it acquires only a license to the invention for Governmental use, it leaves the commercial rights with the inventor or contractor.³⁹

Ownership of contractor-developed intellectual property is an especially sticky problem for the Department of Defense, which builds and maintains technologies. Unlike agencies whose mission is to forward science, the Department of Defense has a primary purpose (national defense) to fulfill. Within the Department of Defense, the commercialization of the technologies associated with this primary mission is merely one way to reduce costs. Thus, the Department of Defense is in the relatively unusual position of having long-term needs to use technologies, as opposed to agencies with needs of more limited duration.

Add to this long-term need the risk-averse nature of most government procurement professionals and a complex regulatory structure, and the result is a desire to obtain as much intellectual property as possible under the applicable laws and regulations as opposed to acquiring enough intellectual property to fulfill the mission.

As will be discussed below, the Department of Defense's "Other Transactions" authority is one mechanism that may resolve this tension by both encouraging risk taking and removing the complex regulatory framework for intellectual property.

III. Differing Rationales for the Acquisition of Intellectual Property Rights

A. Government Acquisition of Intellectual Property Rights

The Department of Defense's rationale for obtaining protection for work performed in government laboratories is fairly simple. In essence, the Department of Defense uses its intellectual property portfolio to ensure that it can obtain spare parts and to protect itself from lawsuits while using a technology. With regard to inventions developed internally, the Department of Defense also has a significant technology transfer obligation. In this role, the Department of Defense has "long functioned as a national technology-transfer service and in such capacity has heavily contributed to the development of the modern chemical and computer industries in America."⁴⁰

³⁹ RALPH C. NASH, JR. & LEONARD RAWICZ, PATENTS AND TECHNICAL DATA 69-71 (1983).

⁴⁰ Kuhlman, *supra* note 21, at 321.

Since World War II, if the Government did not develop the technology in-house, it relied upon third parties to perform the research.⁴¹ For this research, the Government usually attempts to purchase sufficient rights in trade secrets, copyrights, and patents to ensure that it can give plans for spare parts to third party contractors. This allows it to obtain second sources for these parts. These second sources help keep the total ownership costs for older “legacy” systems to a minimum through the use of competition and market forces.⁴²

Due to the length of time that the Department of Defense uses technology, the costs of failing to acquire sufficient intellectual property rights can be quite high. When the Government does not receive sufficient license rights in trade secrets and copyrights, it is unable to acquire “second source” products.⁴³ If the Government negotiates a poor division of intellectual property rights, contractors can extract monopoly profits from the Government—to the ultimate detriment of the taxpayer. Contractual restrictions are one of the few means by which a contractor can require the Department of Defense to deal with the owner of a particular trade secret on a sole source basis.⁴⁴ This inhibits competition and increases costs. In essence, when the Government fails to obtain sufficient rights in trade secrets and copyrights, the Government is forced into a unique monopolistic relationship with a supplier. This tactic, often called “cherry picking,” has driven suppliers to become increasingly reliant on trade secrets and copyright restrictions to maximize profits on government contracts.⁴⁵

The Government, however, is fairly comprehensive in its approach to obtaining sufficient rights in trade secrets and copyrights for its own purposes. The Federal Acquisition Regulations (hereinafter referred to as “FAR”), the FAR supplements, and especially the Defense Federal Acquisition Regulation Supplements (hereinafter referred to as “DFARS”), have extensive guidance on the

⁴¹ See, FEDERAL COUNCIL FOR SCIENCE AND TECHNOLOGY, REPORT ON GOVERNMENT PATENT POLICY, at 1 (Combined Dec. 31, 1973, Dec. 31, 1974, Dec. 31, 1975, Sept. 30, 1976) (the Department of Defense was one of the few agencies to allow contractors to retain title to inventions developed under Government contract).

⁴² UNDERSECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS, *supra* note 1, at 3-4.

⁴³ For trade secrets, a good example of the long term effects of a trade secret licenses on procurement of spare parts is found in *FN Manufacturing, Inc. v. United States*, 42 Fed. Cl. 87 (1998). In *FN Manufacturing*, the Court of Federal Claims upheld a sole source procurement in 1998 based upon a trade secret license reached in 1967. In this agreement, the Army obtained limited rights to the M16 rifle and the XM177 submachine gun. When Colt developed the M4 and M4A1 carbines, since these weapons were derived from, and shared a majority of their parts with, the M16 rifle, the Court of Federal Claims found that these systems were also governed by the 1967 agreement. As such, a trade secret agreement signed in 1967 remains effective for procurements of the same and related systems even though the agreement itself is well over thirty years old.

⁴⁴ *Id.* See also, *Ingersoll-Rand Co.*, B-236495, 1989 WL 241478 (Comptroller General Decision Dec. 12, 1989).

⁴⁵ The Government rarely attempts to reverse-engineer parts, instead relying on plans and reports supplied by the original supplier of those parts. Defense Federal Acquisition Regulation Supplement, 48 C.F.R. § 217.7503 (2001). Under DFARS § 217.7503, the Department of Defense clearly indicates that the reverse engineering of parts is the least desirable means to obtain sufficient information to enable a second source manufacturer to make the part. The failure to follow these procedures could, in theory, actually prevent the Government from using these independently created plans. *Westech Gear Corp. v. Department Of The Navy*, 733 F. Supp. 390 (D.D.C. 1989).

appropriate level of rights needed to support a program.⁴⁶ However, typically, whatever flexibility is afforded by the guidance is not exercised. This creates a relatively inflexible structure in which the Department of Defense acquires more rights than it can possibly use in certain areas, while fewer rights than it needs in others.⁴⁷

In addition, second-source contractors have become an important constituency group in the government procurement field; there has been no shortage of congressional interest in this very subject. Since the late 1950s, there have been major congressional reports and two laws passed regarding data rights for the Department of Defense.⁴⁸ A review of the rapidity of alterations to the DFARS, which has changed on average once every two to three years, indicates that there is sufficient interest to force periodic reviews of departmental policy on the appropriate use of data acquired from contractors.⁴⁹ This constant review suggests that the Department of Defense's policy on trade secrets and copyrights is closely tailored to the then-existing needs of the Department of Defense and the contractor community. The question remains, for a rapidly changing world, what is the present need of the Department of Defense for this intellectual property? Traditional procurement devices seem to have failed to attract the new business necessary to sustain the Department of Defense. One of the major causes for this failure is the perception that the Department of Defense is inflexible regarding intellectual property.⁵⁰

1. "Modern" Intellectual Property Clauses

After a couple of false starts, the "modern" intellectual property rights balance began to emerge in about 1965. Around that time, contractors gained the right to retain title to patented inventions first built or conceived of during the performance of a government contract. The Government received a simple right to use the

⁴⁶ See generally 48 C.F.R. §§ 52.200 et seq. (2001) (FAR and DFARS guidance regarding contract clauses).

⁴⁷ See generally Nancy K. Sumption, *Other Transactions: Meeting the Department of Defense's Objectives*, 28 PUB. CONT. L.J. 365 (1999); Roberta Rosenthal Kwall, *Governmental Use of Copyrighted Property: The Sovereign's Prerogative*, 67 TEX. L. REV. 685 (1989).

⁴⁸ See, e.g., 10 U.S.C. §§ 2320-2321 (1994) (governing modern rights in technical data procured under Department of Defense procurements); *Hearings on Proprietary Rights and Data before Subcommittee No. 2 of the House Select Committee on Small Business*, 86th Cong., 2d Sess. (1960) (discussing practices of Department of Defense contractors with regard to intellectual property developed by subcontractors). A more detailed review with regard to patent rights is found in FEDERAL COUNCIL FOR SCIENCE AND TECHNOLOGY, REPORT ON GOVERNMENT PATENT POLICY, at 1-5 (Combined Dec. 31, 1973, Dec. 31, 1974, Dec. 31, 1975, Sept. 30, 1976).

⁴⁹ A good review of these changes is found in *Bell Helicopter*, 85-3 BCA 18,415 (ASBCA 1985), as well as in Appendix E of UNDERSECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS, INTELLECTUAL PROPERTY: NAVIGATING THROUGH COMMERCIAL WATERS (Version 1.1) (Oct. 15, 2001).

⁵⁰ See generally Richard N. Kuyath, *Barriers to Federal Procurement: Patent Rights*, PROCUREMENT LAWYER, vol. 36, no. 1, at 1, 12-25 (Fall 2000) (discussing industry views of various problems created by existing government intellectual property policies).

invention.⁵¹ In addition, where the contractor created a protectable trade secret without government aid, the contractor was able to protect that information by the use of appropriate labels. The clauses embodying these rights have been adjusted frequently in order to strike an appropriate balance between the creator and the enabler. This process has resulted in the system found today in FAR § 27 and DFARS § 227, with the provisions codified in 10 U.S.C. §§ 2320-21 and 35 U.S.C. §§ 200-204.⁵²

2. Privatization of Government Intellectual Property: 1980s

a. Government Contracts Under Bayh-Dole and E.O. 12591

As a consequence of the shrinking “traditional” government contractor base, the Reagan Administration issued a series of laws and regulations aimed at liberalizing intellectual property provisions in government contracts. Under the Bayh-Dole Act,⁵³ as expanded by Executive Order 12,591,⁵⁴ government contractors retained title to inventions developed at government expense, while the government acquired a non-exclusive, non-transferable, irrevocable, paid-up license.⁵⁵ This seems to be a reasonable result—except that the Government has the right to repossess inventions that, in its judgment, are not being commercialized with sufficient alacrity, under the general auspices of a march-in right:

With respect to any subject invention to which [a private party] has acquired title . . . the Federal agency under whose funding agreement the subject invention was made shall have the right . . . to require the contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or

⁵¹ Compare Armed Services Procurement Regulations 7-302.23, Patent Rights (License) (Dec. 1969) in which the Government received only a license to the invention, with Armed Services Procurement Regulations 7-302.23, Patent Rights (Title) (Dec. 1969), under which the Government received title.

⁵² The modern clauses reflect an interesting dichotomy in rights: the Department of Defense realized that it did not need to actually own a patent, but instead found that merely having a license would be sufficient for reprourement purposes. This is in contrast to other Government agencies, which usually required that contractors deliver title to all inventions, created under a Government contract. However, it was found that when Government agencies took title to inventions, there was also little evidence that the Government was able to use these inventions to fulfill their agency mission. In addition, there was also anecdotal evidence that this practice discouraged contractors from working with these agencies. In contrast, the Department of Defense found that allowing contractors to retain title to inventions created under Government contracts both encouraged commercial uses for these inventions which fulfill its agency mission by growing the military industrial complex, it also encouraged more contractors to work with the Department of Defense due to its progressive thinking on intellectual property issues. Accordingly, Congress appears to have adopted the Department of Defense’s patent rights philosophy under the Bayh-Dole Act, codified in 35 U.S.C. §§202-204 (1994).

⁵³ The University and Small Business Patent Procedure Act of 1980, codified at 35 U.S.C. §§ 200 *et seq.* (1994).

⁵⁴ Under Presidential Memorandum on Government Patent Policy to the Heads of Executive Departments and Agencies, dated February 18, 1983, and Exec. Order No. 12,591, the Bayh-Dole Act was applied to large contractors and other non-small businesses and for-profit organizations.

⁵⁵ 35 U.S.C. § 202 (c)(4) (1994). *See* 37 C.F.R. § 401.14(b) (2001); Federal Acquisition Regulations System, 48 C.F.R. §§ 27.302 (c), 52.227-11 and 52.227-12 (2001). *See generally* James V. Lacy et al., *supra* note 26; McCabe, *supra* note 37.

exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the contractor, assignee, or exclusive licensee refuses such request, to grant such a license itself, if the Federal agency determines that such —

(a) action is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(b) action is necessary to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees;

(c) action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees; or

(d) action is necessary because the agreement [to favor American manufacturers per 35 U.S.C. § 204] has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section 204.⁵⁶

“The Government’s march-in right has existed in relative obscurity—never used and largely forgotten—since 1964.”⁵⁷ Though the idea occasionally attracts academic and media attention,⁵⁸ there have been no recorded uses of the march-in right.⁵⁹ Such rights are unlikely to be exercised because market forces drive private products quickly to public distribution.⁶⁰

In addition, in order to track ownership rights, the Government requires periodic reporting of both new and existing inventions.⁶¹ Some commentators have noted that, for companies that rely exclusively on trade secrets, this requirement is perceived as risky, since reporting increases the likelihood of a loss of the trade secret right and possibly requires that all inventions be patented.⁶² In addition, these reporting requirements are sporadically enforced, causing large backlogs and preventing final payment of contracts until all inventions are accounted for.⁶³ The

⁵⁶ 35 U.S.C. § 203; *see* FAR § 27.302(c) (2001); *see id.*

⁵⁷ McCabe, *supra* note 37, at 649.

⁵⁸ *Id.*

⁵⁹ UNDERSECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS, *supra* note 1, at 4-12.

⁶⁰ McCabe, *supra* note 37, at 661-64.

⁶¹ FAR § 52.227-12(h) (2001) requires that the contractor make reports for every new invention as well as annual reports as to the states of all inventions.

⁶² Kuyath, *supra* note 50, at 12-13.

⁶³ A chart showing this process can be found in OFFICE OF THE DEPUTY SECRETARY OF DEFENSE, REPORT OF THE WORKING INTEGRATED PROCESS TEAM ON CONTRACT CLOSEOUT, at 41-47 (Apr. 1999), which also argues that significant cost savings can be realized by reform of the invention reporting requirements.

effect of this cumbersome process is difficult to quantify, especially since the actual reporting requirements are imperfectly followed and inadequately monitored.⁶⁴

The Government’s rights can act as a defense for private infringers.⁶⁵ Moreover, the law provides the Government with a paid-up license to any invention conceived or reduced to practice during the term of the government contract⁶⁶—whether or not the resulting patent is directly related to the product the contractor was hired to produce.⁶⁷ This is in contrast to government’s obtaining rights in trade secrets, where the analysis is function, not funding.⁶⁸ Any patent application must contain a notation that the invention was developed with government money and may be subject to government rights.⁶⁹ In addition, Bayh-Dole has dysfunctional notice and election-of-title requirements—if a proper election is not made within eight months, the contractor may lose his rights in favor of the government.⁷⁰ Such requirements (as with government contracting more generally) reduce the pool of government contractors, to the detriment of the public. Because government contracting is both complex and abstruse, an unknown but probably significant number of technology companies avoid government work altogether. “[P]rivate industry finds required government procedures burdensome and time-consuming.”⁷¹

b. Cooperative Research and Development Agreements

In order to overcome certain of these deficiencies, Cooperative Research and Development Agreements (CRADAs) were authorized by the Federal Technology Transfer Act of 1986.⁷² “Generally, a CRADA is an agreement between a federal laboratory and another party to conduct specified research and development that is

⁶⁴ See generally, GAO REPORT NO. GAO/RCED-99-242, TECHNOLOGY TRANSFER: REPORTING REQUIREMENTS FOR FEDERALLY SPONSORED INVENTIONS NEEDS REVISION (Aug. 1999).

⁶⁵ *FilmTec Corp. v. Hydranautics*, 982 F.2d 1546, 1551, 25 U.S.P.Q. 2d. (BNA) 1283, 1287 (Fed. Cir. 1992), cert. denied, 114 S.Ct. 85 (1993) (“Congress intended that inventions made under this Contract be available to the ‘general public,’ of which Hydranautics is a member, [so] it would be contrary to the intent of Congress to permit FilmTec to preclude Hydranautics from practicing such an invention”). See Robert A. Molan, *FilmTec: A Hard Lesson in Patent Rights and Government Contracting*, 28 PUB. CONT. NEWSL. 5 (1993).

⁶⁶ 15 U.S.C. § 3710a(b)(2) (2000).

⁶⁷ 35 U.S.C. § 201(e) (2000); see McCabe, *supra* note 37, at 653.

⁶⁸ Indeed, the Government has been found to have rights in inventions even where gaps in funding exist. *Appeal of American Nucleonics Corp.*, 73-1 B.C.A. (CCH) ¶ 10,025 (ASBCA Apr. 17, 1973) (interpreting *Mine Safety Appliances Co. v. United States*, 364 F.2d 385, 392 (Ct. Cl. 1966)).

⁶⁹ 35 U.S.C. § 202(c)(6) (1994).

⁷⁰ 35 U.S.C. § 202(c)(3); FAR § 52.227-12(d)(2) (2001).

⁷¹ GAO REPORT NO. GAO/PEMD-91-23, DIFFUSING INNOVATIONS: IMPLEMENTING THE TECHNOLOGY TRANSFER ACT OF 1986, A REPORT TO THE CHAIRMAN, COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY, HOUSE OF REPRESENTATIVES, at 10 (1991). See also Diane M. Sidebottom, *Updating the Bayh-Dole Act: Keeping the Federal Government on the Cutting Edge*, 30 PUB. CON. L.J. 225 (2001) (arguing that the Bayh-Dole Act needs to be rewritten to account for needs of modern commercial practices).

⁷² Pub.L. No. 98-462 (1984).

consistent with the mission statement of the federal laboratory.”⁷³ They involve government-private sector partnerships under which new commercial products are developed in government research facilities. CRADAs “allow for shared costs, shared risks and shared expertise,”⁷⁴ and they are unencumbered by “the restrictions and obligations that are placed on procurement contracts for supplies or services, grants, or cooperative agreements.”⁷⁵

However, CRADA arrangements are clumsy. “The number of patents obtained under CRADAs may be relatively low because the government retains intellectual property rights to the discoveries made under CRADAs, thus making such arrangements less attractive to industry than arrangements with universities. . . . [I]ndustry has greater incentive to invest in university research than to invest in CRADA arrangements with federal laboratories.”⁷⁶ They may be subject to competitive-bidding rules.⁷⁷ The research program must adhere to rigid federal standards and navigate the federal bureaucracy. In addition, the government retains, at a minimum, a non-exclusive, irrevocable, paid-up license to any inventions that result from the collaborative research.⁷⁸ Finally, it is unclear whether a CRADA is an enforceable contract under the Tucker Act.⁷⁹ Potential problems enforcing the agreement may discourage participants.

3. Intellectual Property and “Other Transactions”: 1990s and Beyond

By the 1990s, events forced the Department of Defense to change its views on intellectual property yet again. The system discussed above was adopted over decades and jointly molded by a defense community that no longer exists. At the same time, the need for new weapons systems has increased: a modern generation of enemies (like Al Qaeda) requires different military responses and the speed of technological innovation has meant that legacy systems become obsolete at an increasingly rapid pace. In addition, the Department of Defense in recent years has suffered from a declining budget, and thus has financial incentives to outsource as much work as possible.⁸⁰ This means that there are more outside contractors

⁷³ McCabe, *supra* note 37, at 650.

⁷⁴ Barbara A. Duncombe, *Federal Technology Transfer: A Look at the Benefits and Pitfalls of One of the Country's Best Kept Secrets*, 37 FED. B. NEWS & J. 608, 610 (1990).

⁷⁵ W. Bruce Shirk, *Technology Transfer and Technology Reinvestment—A Comparison of Two Statutory Frameworks*, 41 FED. B. NEWS & J. 64, 65 (1994).

⁷⁶ Kuhlman, *supra* note 21, at 346-47.

⁷⁷ *Chem Service, Inc. v. Environmental Monitoring Sys. Lab.*, 12 F.3d 1256, 1266 (3d Cir. 1993).

⁷⁸ 15 U.S.C. § 3710a(b)(2) (1994).

⁷⁹ See Jeffrey C. Walker, *Enforcing Grants and Cooperative Agreements as Contracts Under the Tucker Act*, 26 PUB. CONT. L.J. 683, 703 (1997) (arguing that CRADAs should be considered contracts under the Tucker Act).

⁸⁰ UNDERSECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS, *supra* note 1, at iii.

performing functions once performed by the government. Thus, while the defense community is growing smaller, the Department of Defense has become increasingly reliant on contractors, and the commercial sector in general, to fulfill its needs.

Within the world of defense research and development, these same forces are at work. The need for new weapons systems has required more government-sponsored research and development. At the same time, as the number of government laboratories is reduced, there are fewer and fewer internal sources to which the Department of Defense can turn for advanced weapons systems. It is for this reason that the Department of Defense is increasingly interested in attracting new commercial partners, and has recognized that its past practices with regard to intellectual property may not be appropriate for the current paradigm.⁸¹

Simply put, the federal government can no longer rely on traditional government contractors to perform all of the functions that it requires. In order to cope with this new scenario, the Department of Defense has actively recruited new contractors to produce its weapons systems—to fill the void left by the vanishing traditional contractors. These new contractors have historically worked in the commercial sector, rather than with the Department of Defense; they are reliant on non-government (and often foreign) sources to help build their technology; and venture capital has become their method of choice for launching new technologies. These new contractors have often refused to deal with the Department of Defense—due, in part, to the misperception that the government is intractable in matters of intellectual property.⁸² In order to address these concerns, the Department of Defense has begun making itself commercial-contractor-friendly, and the new contracting environment is slowly working to attract a new breed of commercial contractor. This new environment is embodied chiefly in the Government’s “Other Transactions” authority.

Created as part of the Federal Acquisition Streamlining Act of 1994,⁸³ “Other Transactions” allow Department of Defense agencies (but not other Government buyers) to “enter into transactions (other than contracts, cooperative agreements, and grants) . . . to carry out basic, applied, and advanced research projects. The authority under this subsection is in addition to the authority . . . to use contracts, cooperative agreements, and grants in carrying out such projects.”⁸⁴ They are “extremely flexible instruments used by the Department of Defense . . . to foster

⁸¹ A slew of policy memoranda recently issued by the Department of Defense demonstrate an understanding that change is required in order to acquire “research services from the broadest possible scope of industry.” UNDERSECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY, MEMORANDUM ON TRAINING ON INTELLECTUAL PROPERTY (Sept. 5, 2000).

⁸² See generally Kuyath, *supra* note 50, at 12-25 (discussing various problems perceived by industry that were created by existing government intellectual property policies); Holly E. Svetz, *Negotiations and Flexibility: DoD’s Intellectual Property Guide Provides Core Principles and Practical Solutions*, PROCUREMENT LAWYER, vol. 36, no. 4, at 9-13 (Summer 2001) (discussing shortcomings of current intellectual properties and attempts to overcome these shortcomings).

⁸³ Pub. L. No. 103-355 (1994) (codified at 10 U.S.C. §§ 2358, 2371 (2000)).

⁸⁴ 10 U.S.C. § 2371(a) (2000). See generally Sumption, *supra* note 47.

dual-use technology, establish industrial capabilities, and strengthen the nation's technological capabilities to advance the national defense system."⁸⁵ Other Transactions are not subject to the Federal Acquisition Regulation, the DFARS, or other procurement statutes.⁸⁶ Under the "Other Transactions" clause, the Government is allowed to participate in a battle of the forms, and is therefore able to draft any intellectual property clause it finds necessary to fulfill a need. To emphasize this point, the Department of Defense has not generated a model Other Transaction Agreement, but instead relies upon its Other Transactions Guide for Prototype Projects (January 2001)⁸⁷ to provide sufficient guidance to obtain the appropriate level of rights.

The Other Transaction authority is patterned after NASA's Space Act authority.⁸⁸ Under the Space Act, NASA was allowed to enter into "Other Transactions," so called because they were neither contracts, grants, nor cooperative agreements. In 1989, Congress extended a similar authority to the Defense Advanced Research Projects Agency.⁸⁹ When this prototyping authority proved popular, Congress extended it to all Department of Defense agencies as part of the Federal Acquisition Streamlining Act of 1994.⁹⁰

Other Transactions authority was created to further three specific Department of Defense missions: (1) enhancing American military technological superiority, (2) streamlining the acquisition process, and (3) integrating civilian and military technology industries.⁹¹ As Kuyath explains,

"Other transactions" have the potential for being of tremendous benefit to both the Government and to industry. Because an "other transaction" is not a procurement contract, cooperative agreement, or grant, it is not subject to the laws, regulations, and other requirements governing such traditional contracting mechanisms. This enormous flexibility allows [the Department of Defense] to issue "other transactions" that permit commercial companies to use their commercial practices almost entirely in the performance of DoD-funded research and development The authority enables DoD to enter into R&D agreements with commercial companies that refuse or are unable to enter into traditional government

⁸⁵ Jeffrey C. Walker, *Enforcing Grants and Cooperative Agreements as Contracts Under the Tucker Act*, 26 PUB. CONT. L.J. 683, 704 (1997). See also Sumption, *supra* note 47, at 395 ("An OT is a flexible contractual instrument").

⁸⁶ Richard N. Kuyath, *The Untapped Potential of the Department of Defense's "Other Transaction" Authority*, 24 PUB. CONT. L.J. 521, 535-36 (1995).

⁸⁷ Available at <http://web2.deskbook.osd.mil/>.

⁸⁸ Sumption, *supra* note 47, at 380.

⁸⁹ *Id.*

⁹⁰ As this extension of authority was embodied in Section 845 of The National Defense Authorization Act for Fiscal Year 1994, Other Transactions for prototypes are often called 845 Agreements to prevent confusion with its close cousin, the Other Transaction for Research.

⁹¹ Sumption, *supra* note 47, at 367-80.

cost-reimbursement contracts, grants, or cooperative agreements. “Other transactions” offer tremendous potential for reducing DoD’s R&D costs and for allowing leading-edge, high-technology companies to participate in DoD-funded R&D programs in situations where they otherwise would not do so.⁹²

Others are equally enthusiastic: “DoD’s implementation of its OT authority will determine its success If DoD’s OT authority is implemented properly and used appropriately, it could prove to be one of DoD’s biggest successes for the warfighter.”⁹³

An expanded reading of these “Other Transactions” may hold the key to more efficient Government contracting in the intellectual property sector. Other Transactions allow the Department of Defense “to leverage both private sector technology and financial investment and to reduce barriers between defense and civilian industrial bases, furthering DoD’s objectives for civil/military integration. . . . [F]lexible intellectual property and financial management provisions of research OTs have attracted firms that have not traditionally done business with DoD.”⁹⁴ In essence, Other Transactions allows the Government, and more specifically the Department of Defense, to adopt commercial practices that would otherwise not have been easily permitted under traditional contracting rules.

Nevertheless, “‘Other Transactions’ remains a largely untapped resource.”⁹⁵ Expanded use of Other Transactions would theoretically attract qualified high-technology contractors to the government contracting market—a result that would benefit both the government and the contractors.⁹⁶ However, it appears that the new procurement device has mainly attracted traditional government contractors rather than the intended commercial sector businesses. As noted in testimony before the General Accounting Office, Other Transaction agreements are still mainly used by traditional defense contractors.⁹⁷ Specifically, of 97 agreements reviewed, 84 had

⁹² Kuyath, *supra* note 86, at 522-24.

⁹³ Sumption, *supra* note 47, at 413.

⁹⁴ *Id.* at 397-98 (Ms. Sumption offers Hewlett-Packard as an example: “Hewlett-Packard, having previously declined to conduct research with the Government because it wanted to protect its technical data rights, has since entered into a research OT . . . that will lower the costs of high speed data transmission [T]he intellectual property provision enabled Hewlett-Packard and the Government to craft a more flexible business arrangement by providing for increased time to notify the Government of a subject invention and inform the Government as to whether the company intends to take title; by delaying the time for the Government to exercise its government purpose license rights; by allowing the consortium to maintain inventions and data as trade secrets; and by prohibiting the Government from receiving any rights in technical data unless [it] exercised its ‘march-in’ rights.”).

⁹⁵ Richard N. Kuyath, *The Untapped Potential of the Department of Defense’s “Other Transaction” Authority*, 24 PUB. CONT. L.J. 521, 524 (1995).

⁹⁶ *Id.* (“Use of ‘other transactions’ also offers DoD a way to obtain the latest in state-of-the-art, dual-use technologies. Access to such technologies can be of invaluable assistance to DoD in achieving its goal of preserving the defense industrial base and the technological superiority of United States weapon systems”).

⁹⁷ GAO REPORT NO. GAO-01-980T INTELLECTUAL PROPERTY: INFORMATION ON THE FEDERAL FRAMEWORK AND DOD’S OTHER TRANSACTION AUTHORITY, at 9-10 (July 17, 2001). *See* Sumption, *supra* note 84, at 376, notes 38-39.

been awarded to traditional defense contractors.⁹⁸ This resulted despite the flexibility afforded with regard to intellectual property under the Other Transaction authority.⁹⁹ Thus, it appears that the main beneficiaries of the government's new policy remain the traditional defense firms. This is not set in stone, however, and given the present commercial environment Other Transactions are a more attractive option for companies seeking new sources of support for technology research.

B. Private Acquisition of Patentable Technology

Private companies seek protection for a simpler reason than those of the government: They are attempting to generate profits for shareholders by developing new products. "Industrial R&D today is characterized by increased industry spending and the globalization of R&D investments."¹⁰⁰ Intellectual property protections enhance their ability to demand premium rents for these products and allows them to recoup up-front development costs.¹⁰¹ Profit is strongly linked with innovation. Thus, research and development is a major component of most private sector company budgets, and most industrial contracts assert rights in *any* invention developed on company time using company facilities—even if the invention is only tangentially related to the employee's job function. Such rights can be tremendously lucrative.¹⁰²

In the private sector, intellectual property rights also act as a barrier to market entry. First, developing patentable technologies requires high capital investment, both in facilities and in research and development.¹⁰³ Second, patent rights, once obtained, significantly limit what a company's competitors can market and sell. (This is especially clear in the case of business method patents for internet

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ Sumption *supra* note 84, at 379.

¹⁰¹ See, e.g., Philip Areeda & Louis Kaplow, ANTITRUST ANALYSIS: PROBLEMS, TEXT, CASES ¶ 336 (1997); McCabe, *supra* note 55, at 646-48 ("the patent holder or its licensees may be able to obtain an enhanced return in the subject invention The market exclusivity provided by patent protection [also] affords patent owners the opportunity to realize a return on their initial investment").

¹⁰² Consider, for example, the dispute that has recently arisen with respect to the Lemelson patents. "Inventor Jerome Lemelson fiercely, and with considerable success, litigated with big companies around the world during his life to extract licensing revenues linked to his many patents. A private foundation he started has carried on his litigious tradition since his death in 1997. But in a delicious legal twist, a Colorado mining company now claims, in a lawsuit filed in Reno, Nevada, that it is the real owner of Lemelson patents covering widely used bar code technology and should be paid millions of dollars." Victoria Slind-Flor, *Stalking the Submarine Patent King: A Colorado Mining Company Has Dropped a Potential Legal Depth Charge on the Estate of Jerome Lemelson*, THE RECORDER (SAN FRANCISCO), Oct. 1999, at S39.

¹⁰³ See, e.g., Claude E. Barfield & Mark A. Groombridge, *Parallel Trade in the Pharmaceutical Industry: Implications for Innovation, Consumer Welfare, and Health Policy*, 10 FORDHAM L.P., MEDIA, & ENT. L. J. 185, 187 (1999); Thomas J. McCoy, *Biomedical Process Patents*, 13 J. LEGAL MED. 501, 511-512 (1991).

technologies.)¹⁰⁴ Finally, for some products, a patent allows the holder to be the sole-source supplier for a given market.¹⁰⁵

In turn, the existence of patent rights guarantees monopoly profits, which allows private sector companies to continue their high investment in research and development with respect to new technologies. This cycle of monopoly profit and reinvestment enables companies to continually advance the state of the art. As a consequence, preserving intellectual property rights is absolutely essential. Strong intellectual property rights regimes are associated with wider diffusion of technologies and increased investment in the underlying assets.¹⁰⁶

Private companies (excepting defense contractors) usually rely on the private sector, not the government, for revenues. Individual consumers or other companies are the primary customers; government contracting is typically a sideline in a truly commercial firm. Market pressures keep prices low. By contrast, since the government has no competitors, it keeps prices low by selecting the low bidder in a competitive process¹⁰⁷—a procedure that can impact the quality of the result the government receives. “Industry participants cited flexible management practices, including those of both the government program managers and consortium steering committees, as the key element of making an OT project effective.”¹⁰⁸ For the government to entice private companies into the government contracting sector, it must act more like a private entity itself. “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.”¹⁰⁹

IV. Different Public- and Private-Sector Uses for Patented Technology

The government, and especially the Department of Defense, also puts technology to different uses than the private sector. The government is not primarily interested in selling products to consumers. For some agencies, such as the Department of Energy and the National Institutes of Health, the government is interested in developing new technologies to be used by the private sector. In this

¹⁰⁴ See, e.g., Sari Gabay, Note, *The Patentability of Electronic Commerce Business Systems in the Aftermath of State Street Bank & Trust Co. v. Signature Financial Group*, 8 J. L. & POLICY 179, 214-224 (1999).

¹⁰⁵ See, e.g., John H. Barton, *Economics of Patent Enforcement*, 532 PLI/PAT 343, 350 (1998) (noting that any supplier “would like to use IPR to place itself in a sole-source position and obtain a greater rent”).

¹⁰⁶ Robert P. Merges, *Intellectual Property Rights, Input Markets, Transactions, and the Value of Intangible Assets*, at <http://www.law.berkeley.edu/bcl/pubs/merges/iprights.pdf> (last visited Oct. 12, 2001).

¹⁰⁷ See generally RALPH C. NASH, JR. & JOHN CIBINIC, *FORMATION OF GOVERNMENT CONTRACTS* (2d ed. 1986).

¹⁰⁸ Sumption, *supra* note 47, at 405.

¹⁰⁹ JACQUES S. GANSLER, *AFFORDING DEFENSE* 245 (1989).

sense, the government acts as a facilitator, and uses its intellectual property accordingly.¹¹⁰

The Department of Defense also needs to ensure that it can continue to use and maintain the product.¹¹¹ Thus, the government needs, at a minimum, the right to use the invention and enough associated technical information that it can maintain, repair and upgrade it. Everything is driven by use, not marketability; in an important sense, the Department of Defense is a consumer of intellectual property, rather than a producer.¹¹² Even those items it develops in-house or under contract are intended for government use, not commercialization to third parties.¹¹³ Thus, while commercialization is the driving rationale for private sector IP, it is essentially an afterthought for government IP.

One implication of this difference is that (excepting questions of security) the government should technically be satisfied with pure contractual arrangements. There is no obvious need for the government to own the intellectual property involved, and private sector maintenance of the invention is likely to be cheaper than training and employing government workers to use and maintain privately-developed technology. There is a significant opportunity to develop a closer symbiotic relationship between government as an IP consumer and industry as a high-tech producer. However, in order to take advantage of such an opportunity, both sides need to appreciate the specific needs of the other.

Another implication of this distinction is that private companies value the uses of technology differently. A private-sector IP right-holder should technically be willing to license for royalties, etc., depending on the marketability of the product. Royalty mechanisms allow the various entities involved in the development and marketing of intellectual property to control the level of risk they are willing to bear—a flexibility unavailable in government work.

As noted, intellectual property also creates barriers to market entry, and thus helps private companies maintain position or gain ground in inter-firm competition. Since intellectual property requires a major up-front research investment in both time and money, IP rights can be a powerful tool in market maintenance—even if they are not commercialized, but rather used as a deterrent. This use of intellectual property as a barrier is in apparent conflict with the “march-in” rights the Government enjoys under Bayh-Dole.

¹¹⁰ For an interesting discussion on the use of government intellectual property policies to promote the goals of the National Institutes of Health, see Barbara M. McGarey & Annette C. Levey, *Patents, Products, And Public Health*, 14 BERKELEY TECH. L.J. 1095 (1999).

¹¹¹ See generally Lionel M. Lavenue, *Technical Data Rights in Government Procurement: Intellectual Property Rights in Computer Software and the Indicia of Information Systems and Information Technology*, 32 U.S.F. L. REV. 1 (1997).

¹¹² *Id.*

¹¹³ *Id.*

Private-sector competition is based primarily on the superiority of products or brands. Though cost is always a factor, in the authors’ experience most high-grade commercial technology consumers place higher emphasis on quality than on price. Intellectual property allows right-holders to monopolize the market for a given invention, and restricts the ability of a competitor to develop an analogous product. The Department of Defense, by contrast, is not concerned with competition in this sense: as a monopsonist (monopoly buyer), it has the luxury of purchasing on the basis of price.

The final distinction is that the Government enjoys special privileges regarding patent infringement. Government infringement of private patent rights are characterized as an “unauthorized use” for which the inventor is only entitled to “reasonable and entire compensation”:

Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner’s remedy shall be by action against the United States in the United States Court of Federal Claims for the recovery of his reasonable and entire compensation for such use and manufacture.¹¹⁴

No injunctive relief is available.¹¹⁵ Thus, the government in effect has a statutory right to a royalty-bearing license to any patent.¹¹⁶ This, alone, militates strongly against government ownership of patent rights in commercial devices: If the government has *carte blanche* authority to practice any patent, it has no real need to own contractor-developed patents—except to generate additional revenues.¹¹⁷

V. Conclusion

There are significant differences in the ways that government, especially the Department of Defense, and the private sector acquire and use intellectual property. At the same time, because the “traditional” Department of Defense contractor sector is shrinking, the Department of Defense is increasingly required to bargain with private industry on private industry’s terms. Unless steps are taken to increase the flexibility of current procurement practices, this is a trend that bodes ill for American military readiness. It also condemns the Department of Defense’s civilian

¹¹⁴ 28 U.S.C. § 1498(a) (1994). Government contractors acting in the course and scope of their contract enjoy the same immunity. *Id.*

¹¹⁵ See RALPH C. NASH, JR., & LEONARD RAWICZ, PATENTS AND TECHNICAL DATA 283-284 (1983).

¹¹⁶ For a more detailed discussion on 28 U.S.C. § 1498 (1994) and its effects, see Richard J. McGrath, *The Unauthorized Use of Patents by the United States Government or Its Contractors*, 18 AIPLA. Q.J. 349 (1991).

¹¹⁷ Discussing the State of California’s recent Senate Bill 875 (1999), which would create a centralized Office of Intellectual Property to exploit state-owned inventions, see Catherine Bridge, *Officials Look at Protecting California IP*, THE RECORDER (SAN FRANCISCO), Nov. 9, 1999, at 1, one editorialist wrote that “[t]his is another get-around-a-tax-hike revenue generator aimed at pumping up state coffers.” David Brown, *Agency for State’s IP Is Patently Goofy Idea*, THE RECORDER (SAN FRANCISCO), Nov. 12, 1999, at 4.

and military infrastructure to mediocrity and inefficiency since the best and most able companies will not be providing this infrastructure. As technology develops, the Department of Defense is being left behind. “The defense industry’s tremendous consolidation over the past decade has left DoD with fewer contractors competing for DoD programs. Numerous reports, studies, and testimonies recognize that DoD’s unique contracting requirements and procedures, not access to technology, prevent civil/military integration from occurring and often recommend the use of industry’s best commercial practices.”¹¹⁸

When the government funds basic research, there is—and should be—no debate about who owns the rights. “No scholarship, fellowship, training grant, or other funding agreement made by a federal agency primarily to an awardee for educational purposes will contain any provision giving the federal agency any rights to inventions made by the awardee.”¹¹⁹ Similar flexibility must be shown with the private sector. In an economy increasingly driven by technology, the government’s regulatory hurdles drive new companies away from the government market. The Department of Defense can reverse this trend, however, if contracting officials will begin to use the tools available to them to minimize the disincentives felt by the private sector.

The private sector needs the government, too. In an unstable market, technology companies need a stable partner to develop the next generation of commercial technology. As also occurred after World War II, these commercial companies are in a position to best take advantage of the Department of Defense’s new outlook on procuring intellectual property. Formerly rigid requirements pertaining to the reporting of inventions and even march-in rights now can be tailored to the needs of the parties. To take advantage of this opportunity, however, the commercial companies will have to revisit perceived obstacles, like the unreasoning fear of government march-in rights. Further, commercial companies will have to treat government as they would any commercial partner—which necessarily includes accounting for the partner’s legitimate needs in intellectual property. Using these principles, commercial companies can obtain steady support for developing the technology of tomorrow without risking their commercial advantage.

Other Transactions, if expanded to their logical limits, may be just the mechanism to break down the real and perceived barriers between commercial companies and the Department of Defense. This new contractor paradigm would be tailored to meet the rapidly-changing technology marketplace while allowing the

¹¹⁸ Sumption, *supra* note 47, at 376 (footnotes omitted).

¹¹⁹ 35 U.S.C. § 212 (1994). *See* 31 U.S.C. § 6303 (1994), which authorizes the Government to negotiate the allocation of intellectual property rights on a case-by-case basis for grant research. *See also* Jeffrey C. Walker, *Enforcing Grants and Cooperative Agreements as Contracts Under the Tucker Act*, 26 PUB. CONT. L.J. 683, 687 (1997) (“recipients benefit from receiving the rights to intellectual property that result from a project under an assistance agreement”).

Department of Defense to obtain the support it needs to fulfill present and future missions with minimal economic waste.

Appendix: Joint Research and March-In Rights in the European Union

The European Union’s rules concerning jointly-developed intellectual property provide an interesting counterpoint to the U.S. system discussed in this paper. In the EU, joint public-private research and development ventures and contracts are governed by Council Decision of 22 December 1998¹²⁰ and its implementing Commission Regulation.¹²¹ Under these rules, intellectual property ownership in cooperative research is determined by tracing funding sources. The key inquiry seems to be “in principle, the level of Community financial participation.”¹²² Thus, “knowledge” (which is defined as the results of any research and technological development activities¹²³) is owned by the funder, pursuant to the following rules:

“Knowledge” developed solely by the E.U. Joint Research Centre “shall be the property of the community.”¹²⁴

According to the Council Decision, “knowledge” developed solely using E.U. funds “shall, as a general rule, be the property of the Community.”¹²⁵ The Regulation is more definitive: “Knowledge gained from projects, all the costs of which are borne by the Community, shall be the property of the Community.”¹²⁶

“Knowledge” resulting from cooperative research is the property of the involved private enterprises.¹²⁷ As a default rule, this knowledge is the joint property of the participants,¹²⁸ who must “agree among themselves on the allocation and the terms of exercising the ownership of the knowledge.”¹²⁹

“Knowledge” resulting from private funds is the property of the parties funding the research (which can, in some circumstances, include the E.U.).¹³⁰

¹²⁰ Council Decision 1999/65 of 22 December 1998, O.J. (L26)46.

¹²¹ Commission Regulation 996/1999 of 11 May 1999, 1999 O.J. (L122)9.

¹²² Council Decision 1999/65, art. 19(2).

¹²³ *Id.* art. 1(j).

¹²⁴ *Id.* art. 15(1); Commission Regulation 996/1999, art. 48.

¹²⁵ Council Decision 1999/65, art. 15(2).

¹²⁶ Commission Regulation 996/1999, art. 18(1).

¹²⁷ Council Decision 1999/65, art. 15(2), ¶ 2.

¹²⁸ Commission Regulation 996/1999, art. 19(1).

¹²⁹ *Id.* art. 18(3).

¹³⁰ Council Decision 1999/65, art. 15(2), ¶ 3. *Accord*, Commission Regulation 996/1999, art. 18(2).

“Knowledge” owners must provide “adequate and effective protection” for their intellectual property.¹³¹ Article 19 of the Decision guarantees that “[p]articular account shall be taken of the need to safeguard intellectual and industrial property rights,”¹³² and “the legitimate interests of the contractors, including commercial interests.”¹³³ Additionally, the Decision’s preamble states that “the rules for the dissemination of research results must guarantee the protection of rights linked to obtaining and using knowledge,”¹³⁴ “ownership of the knowledge resulting from indirect RTD [research and technology development] is normally determined in accordance with the level of Community financial participation,”¹³⁵ and “agreements concerning exclusive rights may be necessary to facilitate exploitation of the knowledge.”¹³⁶

Regardless of ownership, the European Union retains rights in ideas developed in the course of joint research. The Regulation even permits the Commission to obtain foreign patent rights that the private participant has chosen not to pursue, albeit with the participant’s consent. “Where the Commission considers it necessary to protect knowledge in a particular country and such protection has not been applied for or has been waived, the Commission may, with the agreement of the participant concerned, take protective measures The participant may not refuse without good reason.”¹³⁷

By statute, the Community’s goals in engaging in joint research are strengthening Community industry’s international competitiveness, maintaining and creating jobs, promoting sustainable development, improving the quality of life in the Community, supporting the needs of other Community policies, and promoting international scientific and technical cooperation agreements.¹³⁸ The Council Decision contains several provisions guaranteeing that these interests are served with respect to patents derived from joint research. “Any subsequent transfer of such intellectual property rights to a third party is for the contractors to decide subject to imposing a contractual responsibility to respect those obligations on them concerning their dissemination and use and, in particular, the interests of the Community.”¹³⁹ Similarly, knowledge “capable of industrial or commercial application shall be protected in an appropriate manner and for an appropriate period of time, with particular regard to the interests of the Community and of the

¹³¹ Commission Regulation 996/1999, art. 21(1).

¹³² Council Decision 1999/65, art. 19(1)(a).

¹³³ *Id.* art. 19(2).

¹³⁴ *Id.* pmb. ¶ 10.

¹³⁵ *Id.* pmb. ¶ 13.

¹³⁶ *Id.* pmb. ¶ 16.

¹³⁷ Commission Regulation 996/1999, art. 21(2).

¹³⁸ Council Decision 1999/65, art. 2.

¹³⁹ Council Decision 1999/65, art. 15.

contractors.”¹⁴⁰ The Regulation requires joint research participants to “use or cause to be used the knowledge . . . which they own, in accordance with the interests of the Community.”¹⁴¹

Exclusive licensing is permitted under this arrangement; the Regulation states that “in order to ensure the use of knowledge, it should be possible for exclusive access rights to be granted for exploitation purposes.”¹⁴² Still, the role of the Community is probably a cause of concern for private-sector participants in joint research. Under the Council Decision, the Community seems to take an active role in determining whether “knowledge” is being used appropriately. “The Community and the contractors shall use, or ensure that effective use is made of, any knowledge suitable for use in their possession, in conformity with the interests of the Community.”¹⁴³

Under Article 17 of the Council Decision, the Commission can order dissemination of protectable information—possibly extinguishing any intellectual property protections that might otherwise have been available for the invention. If contractors do not satisfy the Community’s interests, “after a specified period of time, [the knowledge] must be disseminated by the contractors or, where appropriate, by the Commission.”¹⁴⁴ The Regulation holds that “[i]f the knowledge is not used in accordance with paragraph 1, second subparagraph . . . the Community shall disseminate the knowledge itself.”¹⁴⁵ Thus, the European Commission has a power similar to, and perhaps even broader than, the U.S. Government’s march-in rights.

¹⁴⁰ *Id.* art. 16.

¹⁴¹ Commission Regulation 996/1999, art. 22(1); *see also id.* art. 50.

¹⁴² *Id.* pmb1. ¶ 17.

¹⁴³ Council Decision 1999/65, art. 17(1).

¹⁴⁴ *Id.* art. 17(2).

¹⁴⁵ Commission Regulation 996/1999, art. 22(2).

