United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Technology and Procurement Policy, Committee on Government Reform, House of Representatives

For Release on Delivery
Expected at 10:00 a.m.
Friday, May 10, 2002

INTELLECTUAL PROPERTY

Industry and Agency Concerns Over Intellectual Property Rights

Statement of Jack L. Brock, Jr., Managing Director, Acquisition and Sourcing Management

G A O
Accountability * Integrity * Reliability

GAO-02-723T

Report Documentation Page

Report Date	Report Type	Dates Covered (from... to)
10MAY2002	N/A	-

Title and Subtitle INTELLECTUAL PROPERTY: Industry and Agency Concerns Over Intellectual Property Rights	**Contract Number**
	Grant Number
	Program Element Number
Author(s)	**Project Number**
	Task Number
	Work Unit Number
Performing Organization Name(s) and Address(es) General Accounting Office, PO Box 37050,Washington, DC 20013	**Performing Organization Report Number** GAO-02-723t
Sponsoring/Monitoring Agency Name(s) and Address(es)	**Sponsor/Monitor's Acronym(s)**
	Sponsor/Monitor's Report Number(s)
Distribution/Availability Statement Approved for public release, distribution unlimited	
Supplementary Notes	

Abstract
Thank you for inviting me to participate in todays hearing on intellectual property. Intellectual property represents the very essence of the creative process that results in unique products and processes. As such, any transactions that affect the ownership, control, or transfer of intellectual property can have enormous implications for parties on both sides of those transactions. Improperly defined rights to intellectual property in a government contract can result in the loss of an entitys critical assets or in limiting the development of applications critical to public health or safety. Conversely, successful contracts can spur economic development, innovation, and growth and dramatically improve the quality of delivered goods and services.

Subject Terms	
Report Classification unclassified	**Classification of this page** unclassified
Classification of Abstract unclassified	**Limitation of Abstract** SAR

Number of Pages
13

Mr. Chairman and Members of the Subcommittee:

Thank you for inviting me to participate in today's hearing on intellectual property. Intellectual property represents the very essence of the creative process that results in unique products and processes. As such, any transactions that affect the ownership, control, or transfer of intellectual property can have enormous implications for parties on both sides of those transactions. Improperly defined rights to intellectual property in a government contract can result in the loss of an entity's critical assets or in limiting the development of applications critical to public health or safety. Conversely, successful contracts can spur economic development, innovation, and growth and dramatically improve the quality of delivered goods and services.

The government acquires intellectual property in two ways. First, it typically owns the intellectual property produced by federal employees. Secondly, it acquires certain rights—although not necessarily ownership—of the intellectual property produced by others under federal research contracts, grants, and other agreements. Our statement today is largely focused on rights to intellectual property and related data acquired through contracts. Your charge to us, Mr. Chairman, was to determine if the government's ability to contract with commercial companies for goods and services needed to support essential government services, such as homeland security and national defense, was restricted by concerns over rights to intellectual property.

It is clearly appropriate to address these concerns. The government's need for advanced technologies is growing at a seemingly exponential rate. While the needs are growing, the government's control over the development of the underlying intellectual property supporting those technologies is declining. The government is no longer the leading supplier of research and development (R&D) dollars in the United States. While the government's share of R&D funding was as high as 67 percent of R&D dollars in the 1960s, its share fell to below 47 percent in the 1980s and to 26 percent in 2000, according to the National Science Foundation. Instead of driving research and its outcomes, the government must increasingly rely on the commercial sector. The government's ability to successfully deal with issues over intellectual property constitutes a key factor in being able to acquire the new technologies necessary to meet increasingly sophisticated operational needs.

To address your question, we held extensive interviews with agency officials, commercial companies, and industry associations involved in

intellectual property rights. We also analyzed agency and industry studies on this issue as well as agency guidance and requirements.

Generally, the framework for promoting and protecting intellectual property rights in the government has been considered a success. However, our work revealed a broad range of concerns from both agency and industry officials. Contracting for intellectual property rights is difficult. The stakes are high, and negotiating positions are frequently ill-defined. Moreover, the concerns raised by both parties must be tempered with the understanding that government contracting—especially those contracts dealing with new or large applications or having loosely defined objectives—can be challenging even without the additional complexities associated with intellectual property. Further, commercial contractors often have a variety of reasons for not wanting to contract with the government, including concerns over profitability, capacity, accounting and administrative requirements, and opportunity costs.

Nevertheless, our work leads us to the following observations:

- First, within the commercial sector, companies identified a number of specific intellectual property concerns that affected their willingness to contract with the government. These included perceived poor definitions of what technical data is needed by the government, issues with the government's ability to protect proprietary data adequately, and unwillingness on the part of government officials to exercise the flexibilities available to them concerning intellectual property rights. We believe some of these concerns were based more on perception than experience, but, according to company officials, they nevertheless influenced decisions not to seek contracts or to collaborate with federal government entities.
- Second, agency officials shared many of these concerns. Poor upfront planning and limited experience/expertise among the federal contracting workforce were cited as impediments to contracting for intellectual property rights. However, while agency officials indicated that problems related to intellectual property rights may have limited access to particular companies, they did not raise or cite specific instances where the agency was unable to acquire needed technology.
- Third, there was general agreement among agency officials that improved training and awareness as to the flexibility already in place as well as a better definition of data needs on individual contracts would generally improve the situation.

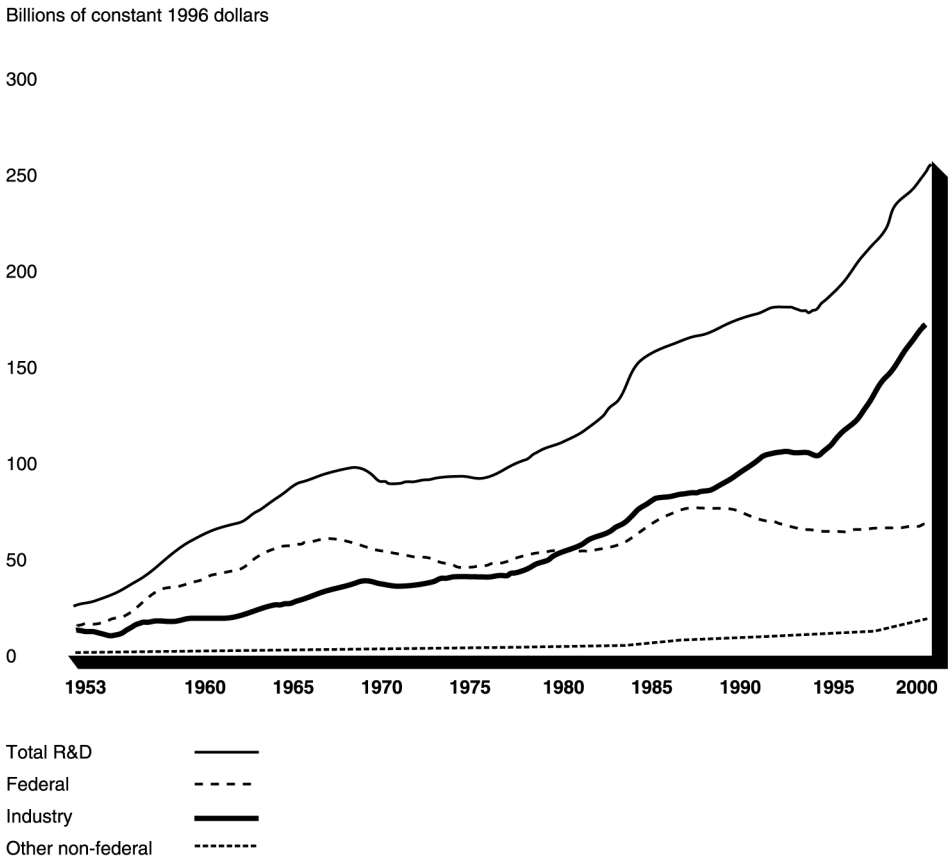
Intellectual Property and Its Value to Government

Intellectual property has a broad range—anywhere from inventions, to technological enhancements, to methods of doing business, to computer programs, to literary and musical works and architectural drawings. Government-sponsored research has an equally broad range—from research in mathematical and physical sciences, computer and information sciences, biological and environmental sciences, and medical sciences, to research supporting military programs of the Department of Defense (DOD) and the atomic energy defense activity of the Department of Energy. The objective of some of this research, for example, cancer research, is to gain more comprehensive knowledge or understanding of the subject under study, without specific application. According to the National Science Foundation, about 3 percent of DOD's R&D funding and 41 percent of R&D funding by other agencies goes toward this type of study. Other research is directed at either gaining knowledge to meet a specific need or to develop specific materials, devices, or systems—such as a weapon system or the International Space Station. About 97 percent of DOD's R&D dollars and 55 percent of R&D dollars from other agencies supports applied research.

The primary vehicles for funding research efforts are grants, cooperative agreements, and contracts. Today, our focus is largely on intellectual property rights that the government acquires through research done under contracts, which primarily fund applied research.

As illustrated in the figure below, the R&D landscape has changed considerably over the past several decades. While the federal government had once been the main provider of the nation's R&D funds, accounting for 54 percent in 1953 and as much as 67 percent in 1964, as of 2000, its share amounted to 26 percent, or about $70 billion, according to the National Science Foundation.

Figure 1: Trends in R&D Funding



Source: National Science Foundation.

Intellectual Property Protections and Legislation

Patents, trademarks, copyrights, and trade secrets protect intellectual property. Only the federal government issues patents and registers copyrights, while trademarks may also be registered by states that have their own registration laws. State law governs trade secrets. Anyone who uses the intellectual property of another without proper authorization is said to have 'infringed' the property. Traditionally, an intellectual property owner's remedy for such unauthorized use would be a lawsuit for injunctive or monetary relief.

Figure 2: Definitions of Patents, Trademarks, Copyrights, and Trade Secrets

- **Patents** provide exclusive rights to make, use, import, sell, and offer for sale an invention for up to 20 years.
- **Trademarks** protect words, names, symbols, sounds, or colors that distinguish goods and services.
- **Copyrights** protect works of authorship, such as writings, music and works of art that have been tangibly expressed.
- **Trade secrets** are information that companies keep secret to give them an advantage over their competitors. The formula for Coca Cola is the most famous trade secret.

Source: U.S. Patent and Trademark Office.

Prior to 1980, the government generally retained title to any inventions created under federal research grants and contracts, although the specific policies varied among agencies. Over time, this policy increasingly became a source of dissatisfaction. First, there was a general belief that the results of government-owned research were not being made available to those who could use them. Second, advances attributable to university-based research funded by the government were not pursued because the universities had little incentive to seek use for inventions to which the government held title. Finally, the maze of rules and regulations and the lack of a uniform policy for government-owned inventions often frustrated those who did seek to use the research.

The Bayh-Dole Act[1] was passed in 1980 to address these concerns by creating a uniform patent policy for inventions resulting from federally sponsored research and development agreements. The act applied to small businesses, universities, and other nonprofit organizations and generally gave them the right to retain title to and profit from their inventions, provided they adhered to certain requirements. The government retained nonexclusive, nontransferable, irrevocable, paid-up (royalty-free) licenses to use the inventions.

A presidential memorandum issued to the executive branch agencies on February 18, 1983, extended the Bayh-Dole Act to large businesses. It extended the patent policy of Bayh-Dole to any invention made in the performance of federally funded research and development contracts, grants, and cooperative agreements to the extent permitted by law. On April 10, 1987, the president issued Executive Order 12591, which, among

[1] The Bayh-Dole Act is the common name for the Patent and Trademark Laws Amendments of 1980 (P.L. 96-517, Dec. 12, 1980).

other things, required executive agencies to promote commercialization in accordance with the 1983 presidential memorandum. Below are highlights of requirements related to the Bayh-Dole Act and Executive Order 12591.

Figure 3: Highlights of Requirements

The contractor or grantee must disclose to the appropriate agency any invention created with the use of federal funds within 2 months of the date the inventor discloses the invention in writing to the contractor or grantee.	In applying for a patent, the organization must add a government interest statement that discloses the government's rights to the invention.
If the contractor or grantee decides to retain title to the invention, it generally must notify the agency within 2 years of the date of disclosure that it has elected to do so.	The contractor or grantee must attempt to develop or commercialize the invention.
The contractor or grantee must apply for a patent on the invention within 1 year of its election to retain title or within 1 year of the publication, sale, or public use in the United States, whichever is earlier.	If the contractor or grantee is a nonprofit organization, it generally must give priority to small businesses when licensing the invention.
	When granting an exclusive license, the contractor or grantee must ensure that the invention will be "manufactured substantially" in the United States.

In addition to the traditional categories of intellectual property protections, government procurement regulations provide a layer of rights and obligations known as "data rights." These regulations describe the rights that the government may obtain to two types of data, computer software and technical data, delivered or produced under a government contract. These rights may include permission to use, reproduce, disclose, modify, adapt, or disseminate the technical data. A key feature of the DOD framework for data rights, and one implicit in the civilian agency framework, is that the extent of the government's rights is related to the degree of funding the government is providing.[2]

[2] For a contract with DOD, the Defense Federal Acquisition Regulation Supplement (DFARS) contains the applicable data rights framework. The Federal Acquisition Regulation (FAR) provides the framework for civilian agencies and the National Aeronautics and Space Administration.

Figure 4: Highlights of Technical Data Requirements

DOD Framework		
Type of Data Rights	Definition	Applies to
Unlimited Rights	Right to use and disclose the data publicly, in any manner and for any purpose and to permit others to do so.	Data created exclusively with government funds and certain types of other data delivered to the government regardless of funding.
Government Purpose Rights	Right to use or disclose within the government without restriction or disclose to third parties for government purposes only. Third parties cannot use the data for commercial purposes.	Data developed with a mix of government and private funds.
Limited Rights	Right to use or disclose data internally. No disclosure to third parties without written permission except under limited conditions (e.g., emergency repair)	Data pertaining to items, components, or processes developed at private expense.
Civilian Agency Framework		
Unlimited Rights	Right to use and disclose the data publicly, in any manner and for any purpose and to permit others to do so.	Data first produced or delivered in the performance of the contract; form, fit and function data; and data needed for repairs or maintenance.
Negotiated Rights[a]	Right to use data for agreed-to governmental purposes. Other rights may be tailored as needed and negotiated.	Data developed with a mix of government and private funds.
Limited Rights	Right to use or disclose internally. Cannot disclose outside the government without permission except for certain agreed-on purposes.	Data (other than computer software) developed at private expense that embody trade secrets, or are commercial or financial and confidential or privileged.

[a]The term "negotiated rights" does not actually appear in the Federal Acquisition Regulation. However, the regulation allows for the tailoring of rights for cosponsored research and development activities.

In some cases, the government may decide that it is in its best interest to forgo rights to technical data. For example, if the government wants to minimize its costs of having supercomputers developed exclusively for

government use, it could waive its rights in order to spur commercial development. At the same time, situations arise where the government has a strong interest in obtaining and retaining data rights—either unlimited rights or government-purpose rights. These include long-term projects, such as cleanup at nuclear weapon sites, where the government may want to avoid disrupting the program if a change in contractors occurs. These also include projects that affect safety and security. For example, the Transportation Security Administration recently purchased the data rights for an explosives detection system manufactured by one company. The agency believed data rights were necessary in order to expand production of these machines and meet the congressionally mandated deadline for creating an explosives detection capability at airports.

Agency and Commercial Sector Concerns over Intellectual Property Rights

We contacted multiple agencies responsible for $191 billion or 88 percent of federal procurements in fiscal year 2001. [3] At these agencies, we met with those officials responsible for procurement, management and oversight of contractor-derived intellectual property. We also analyzed agency and industry studies as well as agency guidance and requirements. In addition, we met with representatives from (1) commercial enterprises that either contract with the government or develop technologies of interest to the government as well as (2) associations representing commercial firms doing business with the government.

Both industry and agency officials covered by our review had concerns about the effectiveness and the efficiency of successfully negotiating contracts with intellectual property issues. These concerns include a lack of good planning and expertise within the government and industry's apprehensions over certain government rights to data and inventions as well as the government's ability to protect proprietary data.

Industry officials were particularly concerned about the span of rights the government wants over technical data. Industry officials asserted that rather than making a careful assessment of its needs, some contracting officers wanted to operate in a "comfort zone" by asking for unlimited rights to data, even when the research built on existing company

[3] These included major participants in R&D efforts at the Defense Department, such as the Defense Advanced Research Projects Agency, the Army, the Air Force and the Navy, and civilian agencies such as the National Aeronautics and Space Administration, the Department of Energy, the National Institutes of Health, the General Services Administration, and the Departments of Justice and Transportation.

technology. This was disconcerting to potential contractors because it meant that the government could give data to anyone it chose, including potential competitors. Some companies mentioned specific instances in which they delayed or declined participation in government contracts. These situations occurred when companies believed their core technologies would be at risk and the benefits from working with the government did not outweigh the risk of losing their rights to these technologies.

Most agency officials said that intellectual property issues were at times hotly contested and could become the subject of intense negotiations. While agency officials indicated that problems related to intellectual property rights may have limited access to particular companies, they did not raise or cite specific instances where the agency was unable to acquire needed technology. In some situations, agencies exerted flexibility to overcome particular concerns and keep industry engaged in research efforts.

DOD officials viewed intellectual property requirements and the manner in which these requirements are implemented as significantly affecting their ability to attract leading technology firms to DOD research and development activities. This concerns DOD, which believes it needs to engage leading firms in joint research efforts in order to promote development of commercial technologies that meet military needs.

Last, agency officials, particularly DOD officials, voiced concerns about having access to technical data necessary to support and maintain systems over their useful life as well as the ability to procure some systems competitively, especially smaller systems. These officials stated that if they did not obtain sufficient data rights, they could not use competitive approaches to acquire support functions or additional units. We have reported[4] on the difficulties that occurred when appropriate data rights were not obtained. In one instance, when the Army tried to procure data rights later in the system's life cycle, the manufacturer's price for the data was $100 million—almost as much as the entire program cost ($120 million) from 1996 through 2001. We have recommended, among other things, that DOD place greater emphasis on obtaining priced options for

[4]U.S. General Accounting Office. *Defense Logistics*: *Opportunities to Improve the Army's and Navy's Decision-making Process for Weapons Systems Support*, GAO-02-306, (Washington, D.C., February 2002).

the purchase of technical data at the time proposals for new weapon systems are being considered—when the government's negotiating leverage is the greatest.

Figure 5: Specific Concerns Cited By Agency and Industry Officials

Agency	Industry
Limited awareness of flexibilities and expertise. Contracting and programming officials are not always aware of options they have in negotiating rights to intellectual property. They also do not adequately define data requirements.	*Limited awareness of flexibilities and expertise.* Government contracting and programming officials are not always aware of options they have in negotiating rights to intellectual property. They also do not adequately define their data requirements. The government's fallback position, or "comfort zone" is to resort to standard clauses. Unlimited rights or even government-purpose rights can dissuade companies from participating in contracts because it raises the possibility that sensitive data will end up with competitors.
Concerns over perceived risks. Industry perceives risks that sometimes limit their participation in contracts. These involve requirements related to patentable inventions, including "march-in rights," the definition of subject inventions, and protection of trade secrets.	*Apprehensions over the government's "march-in rights."* Inventions coming out of federally funded research become the property of the contractor; however, the contractor must attempt to commercialize the invention. If the contractor breaches this obligation, the government may "march in" and grant a license to a third party to use the patent. This action may also be taken to alleviate health and safety concerns. While "march-in rights" have reportedly never been exercised, some companies claim these rights deter them from doing business with the government.
	Apprehensions about the definition of "subject invention." Industry was concerned that this provision could mean that the government could have rights to inventions that get to the company's core technology. This particular concern caused some companies to decide not to engage in government-sponsored research at all.
	Concerns about protecting trade secrets. There is some information companies may want to keep secret to maintain an advantage over competitors. Yet the Bayh-Dole Act requires companies to disclose to the government inventions created with federal funds.
Projects involving multiple parties can be difficult. Projects involving multiple parties may also complicate negotiations because of competing interests for intellectual property rights.	*Projects involving universities can be difficult.* Universities may demand patent rights that industry is not willing to give up.
	Cumbersome agency processes. Agencies have cumbersome acquisition processes, which lengthen contract negotiations. The rapid pace of technological change and advances demand quicker turnaround times. Otherwise, industry will lose its competitive advantage.
	Inadvertent disclosure of proprietary data. Research projects often involve a range of contractors—some that work in a research capacity and others that work to support management, contract, or logistics-related functions. The concern of companies responsible for research is that their data will be improperly disclosed to or misused by these other contractors, or even the public. This could be the fault of either the government or the company itself for not properly marking data as proprietary. In either case, if the data is inadvertently disclosed, there is no remedy, and the company's intellectual capital may be devalued.

Actions that Can Be Taken to Address Concerns

Agency officials we spoke with generally agreed that some actions could be taken to address concerns about limited awareness of flexibilities and expertise without any legislative changes. Specifically, agencies could promote greater use of the flexibilities already available to them. DOD, for example, is advocating greater use of its "other transaction authority." This authority enables DOD to enter into agreements that are generally not subject to the federal laws and regulations governing standard contracts, grants, and cooperative agreements. By using this authority, where appropriate, DOD can increase its flexibility in negotiating intellectual property provisions and attract commercial firms that traditionally did not perform research for the government.

A second example of agency flexibility to address industry concerns over the allocation of rights under the Bayh-Dole Act is a form of waiver, known as a determination of exceptional circumstances. This waiver has been used, for example, to work out intellectual property rights between pharmaceutical companies and universities or other firms. In these cases, pharmaceutical companies provide compounds that NIH tests to identify whether these compounds are effective in treating additional diseases or ailments. Universities and other commercial firms perform these tests. The exceptional circumstances determination allows the pharmaceutical companies to retain the intellectual property rights to any discoveries coming out of these tests, rather than the performer of the tests. An NIH official explained that a determination of exceptional circumstances could be made in these cases because the program would not exist in the absence of such a determination.

Agencies could also strengthen advance planning on data requirements. For example, attention needs to be paid to what types of maintenance or support strategies will be pursued and what data rights are needed to support alternative strategies. Also, consideration could be given to obtaining priced options for the purchase of data rights that may be needed later.

Moreover, agencies could provide guidance on intellectual property issues to alert the workforce of potential concerns and solutions. Last year, for example, DOD issued an intellectual property guide that provides a description of the fundamental principles and concepts of negotiating intellectual property rights, a framework of the key aspects of intellectual property and how it is treated in government contracting, and a description of the major intellectual property issues that keep some companies from responding to solicitations as well as possible solutions to attract their involvement. Lastly, agencies could undertake training and

outreach programs to reinforce their guidance and further develop workforce expertise. DOD, for example, is developing training targeted at contracting officers and attorneys.

More substantive action may be warranted, but not without more in-depth examination of specific impediments cited by industry, the effectiveness of flexibilities already available, and the potential impact of suggested changes. The current framework, anchored by the Bayh-Dole Act, has generally been considered a success story in leading to greater commercialization of federally sponsored research. Further, more recent additions to that framework, such as DOD's other transaction authority, can serve as models for enhancing government's contracting flexibility in attracting commercial firms that traditionally have not worked for the government.

The challenge to address is not whether the government should have rights, but rather what rights it should hold, when these rights should be exercised, and what authority should be granted to waive these rights when it is in the best interest of the government.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions that you or members of the subcommittee may have.

Contact and Acknowledgement

For further information, please contact Jack L. Brock, Jr., at (202) 512-4841. Individuals making key contributions to this testimony include Cristina Chaplain, Frank Fulton, John Hunt, Lorene Sarne, Christina Sklarew, Ralph White, and Karen Zuckerstein,