Keywords: *Patent Rights, Government IP Rights, Technology Transfer, Software Data Rights*

Data Rights for Science and Technology Projects

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Defense Acquisition Workforce and defense industry professionals engaged in the acquisition decision process must have extensive knowledge of the relationship between government ownership of Technical Data Rights and the transition of technology from the Science and Technology (S&T) community into Programs of Record (PoR). For purposes of this article, the author's objective was to identify ways to increase such understanding and promote successful transition of Technical Data Rights through use of survey questionnaires that solicited feedback. This research concluded that Program Executive Officers and Program Managers were transitioning the associated Technical Data Rights along with the Advanced Technology Development products; and that DoD ownership of Technical Data Rights makes a statistical difference in the successful transition of technologies.

« Image designed by Diane Fleischer

The Department of Defense (DoD) tasks its Science and Technology (S&T) community to develop innovative technologies that will drive the technological advancements in its weapon systems. Historically, the DoD has been challenged to transition these pioneering technologies into Programs of Record (PoR)—acquisition programs that are recorded in the current Future Year's Defense Program (FYDP) or updated from the last FYDP by approved documentation, such as Acquisition Program Baseline, acquisition strategy, or Selected Acquisition Report. Program Executive Officers (PEO) and Program Managers (PM) have the responsibility to engineer, integrate, and deploy DoD's advanced weapon systems. Concurrent with this technology transition challenge, the DoD is placing renewed emphasis on government ownership of technical data for use throughout the acquisition life cycle.

Background

Title 10, United States Code Section 2320, Rights in Technical Data (2012), has been in force for many years and is instantiated in both the Federal Acquisition Regulation(FAR), (General Services Administration [GSA], DoD, & National Aeronautics & Space Administration, 2005) and Defense Federal Acquisition Regulation Supplement(DFARS) (DoD, 1998). These rights depict who owns the technical data and are typically of three types. The unlimited technical data rights provision allows the government the right to use, disclose, reproduce, or prepare derivative works or distribute copies in any manner and for any purpose, and to have or permit others to do so. The limited technical data rights provision is for data delivered with disclaimers specifying how the government may use or disclose the data. Conversely, the data may be withheld from delivery or specified via form, fit, and function information only (Bozeman, 2000). These rights can take many forms, such as build to print; source code; object code; form, fit, and function; and maintenance, installation, and training (Rights in Technical Data, 2012).

In some instances, the government may have no technical data rights and instead must pay license fees to use the product. A classic example is licensing of computer software developed at private expense.

The Weapon Systems Acquisition Reform Act of 2009 and the Better Buying Power Initiative 2.0 (Kendall, 2012) have identified the need to increase the use of open architectures, use technology development for true risk reduction, and implement a technical data rights strategy over a product's life cycle, including acquiring the technical data rights while competition still exists.

The DoD depends on its research laboratories to develop and transition new technologies and systems that enhance or improve military operations and ensure technological superiority over adversaries.

Erwin (2012) indicates that industry is increasingly concerned over potential government demands for drawings, specifications, and manufacturing methods so future procurements can be made, in some cases, using other sources. She further notes that DoD is requiring industry to turn over data rights, but that some of the technical data being provided to the DoD are developed with industry's own funds, and that the DoD's desire for the best and latest technology is potentially irreconcilable with its policies calling for competition in the marketplace.

Problem Statement

Although a strategy in technical data rights exists at the Department, Service, and PEO levels, no integrated and overarching strategy and guidance is commonly enforced and executed throughout the DoD. Without a consistent approach to purchasing technical data rights for technology development projects, and a potential lack of understanding as to the resultant implications, the determination on whether to purchase technical data rights for these projects is subject to wide variations. The purpose of this article is to analyze the impact of government ownership of technical data rights on the transition of technology from the S&T community to PEOs and PMs. S&T Advanced Technology

Development (ATD) projects have an end goal of transitioning products into acquisition programs that will provide military utility and satisfy user requirements.

This research analyzed completed questionnaires provided to the Army Materiel Systems Analysis Activity (AMSAA), which is investigating internal technology transitions within the S&T community as well as external transitions to PEOs/PMs. By analyzing the completed questionnaires, an assessment of ATD project transition success, or lack thereof, conducted on behalf of PEOs/PMs over the past 10 years will indicate if government ownership of technical data impacts transition success.

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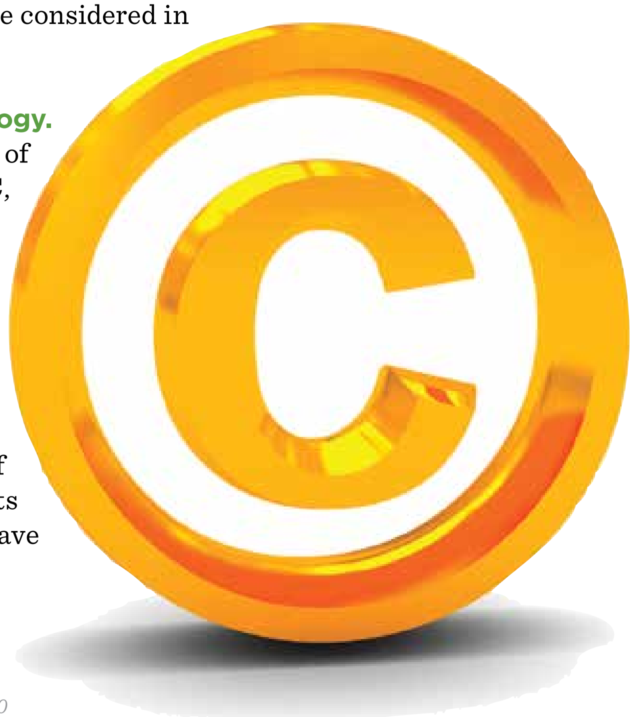
Research Hypothesis

Government ownership of the technical data rights makes no difference in transition of technology projects from the S&T community to PoRs. In other words, data rights have no effect on a project's ability to transition to an acquisition program.

Literature Review of Technology Transition

A significant body of literature has been written about technology transfer and transition (Nambisan & Sawhney, 2007). To better understand the different issues that have been identified within the literature, this section is organized into discussions of the three major theisms in the literature: (a) why we transition technology, (b) barriers to technology transfer, and (c) factors to be considered in evaluating technology transfer.



Why we transition technology. The National Research Council of the National Academies (NRC, 2004) pointed to industry and research experience in fields such as history of technology, business, and social sciences as ways in which the "social, cultural, and historical factors influence adoption, implementation, and long-term acceptance of new technology" (p. 9). It asserts that scientists and engineers have a tendency to see only the technology solutions as causing a failure of technology transition while overlooking these other factors as well as the problem of communication. The interactions between organizational subcultures are vital in determining the success or failure of technology transition. Technology transition is critically dependent on individuals who can successfully manage this interaction, while "fostering the communication that is the essence of successful technology transition" (p. 11).

Brown (2002) argues that in times of rapid and unpredictable change, corporate researchers need to help companies invent new practices and processes to increase their flexibility rather than solely focusing on the next technology or on product development as the centerpiece of innovation. He offers four suggestions to improve an organization's innovation aptitude: (a) investing in research on new work practices, (b) learning how to use the innovation that exists throughout the entire company, (c) coproducing innovation by partnering with others throughout the organization to transmit the innovation, and (d) understanding that the ultimate innovation partner is the customer.

Barriers to technology transfer. Arcella (2005) argues that, to understand how to overcome the low success rate of technology transition through the so-called "valley of death" in the DoD, one needs to look to technical entrepreneurs and salespeople from small start-up companies. The safe path is to stay with legacy systems, thereby eliminating buyer's risk and precluding any red flags and finger-pointing.

The DoD depends on its research laboratories to develop and transition new technologies and systems that enhance or improve military operations and ensure technological superiority over adversaries. Dobbins (2004) explained that technology transition is the process by which technology deemed to be of military use is transitioned from an S&T environment for incorporation into an existing or new-start acquisition program. He also noted that since available technologies suitable for transition usually are not part of the acquisition program's Program Objective Memorandum, this can result in the candidate projects being at risk for successful transition.

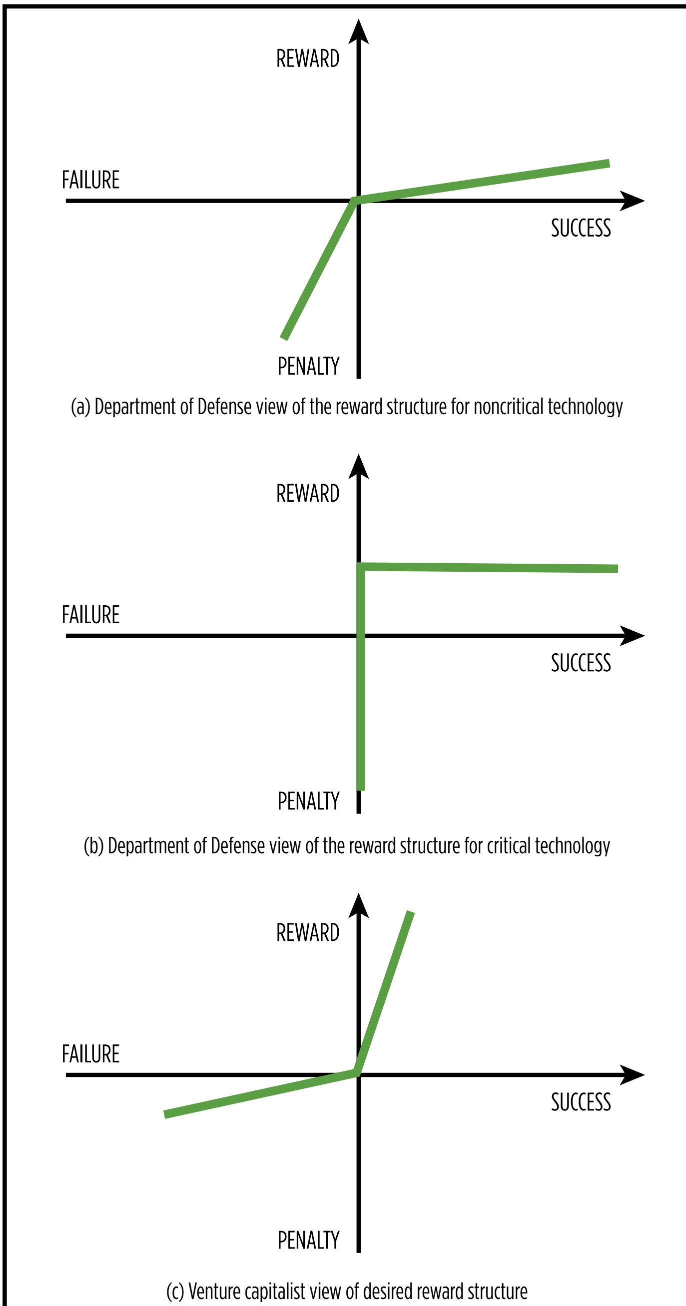
The DoD's ability to successfully and routinely take advantage of its significant investment in S&T programs—funded at $12.2 billion in FY12—and transition the technologies coming out of its laboratories, has been the focus of several Government Accountability Office (GAO) studies and analyses to better understand the challenges and identify possible solutions. The GAO (2005) noted that DoD historically has experienced problems bringing technologies out of the laboratory environment.

Flitter (2008) provides a programmatic definition of technology transition as being the "successful transfer of responsibility for development, testing, and integration of a technology from the S&T community to the acquisition community" (p. 5). He further enumerates that transition involves the "incorporation of a technology into the design for, or production of, an acquisition product" (p. 5). Pezzano and Burke (2004) clearly articulate the need to transition programs from the S&T community into the acquisition system to enable a transforming Army. However, they assert this must be accomplished with maximum flexibility and an approach that reduces risk. However, creativity is required to meet the unique needs of a program and make the most efficient use of our scarce research and development resources (p. 22).

Unlike the DoD, the venture capitalist view places a high value on success and a relatively low penalty for failure, which creates a strong incentive to succeed while accepting failure as part of the process.

The NRC (2004) identified the risk-reward relationship as a primary barrier for successful transition and insertion of new technologies. "This attitude within the DoD that so heavily penalizes failure and does not provide appropriate rewards for success breeds a culture that is, by nature, averse to transitioning new technology very rapidly, or at all" (p. 24). Figure 1 provides a comparison between the DoD and venture capitalist perspective of the value of success and penalty of failure for a particular technology. Unlike the DoD, the venture capitalist view places a high value on success and a relatively low penalty for failure, which creates a strong incentive to succeed while accepting failure as part of the process.

FIGURE 1. DIFFERENT VIEWS OF THE REWARD STRUCTURE FOR NEW TECHNOLOGIES



(a) Department of Defense view of the reward structure for noncritical technology

(b) Department of Defense view of the reward structure for critical technology

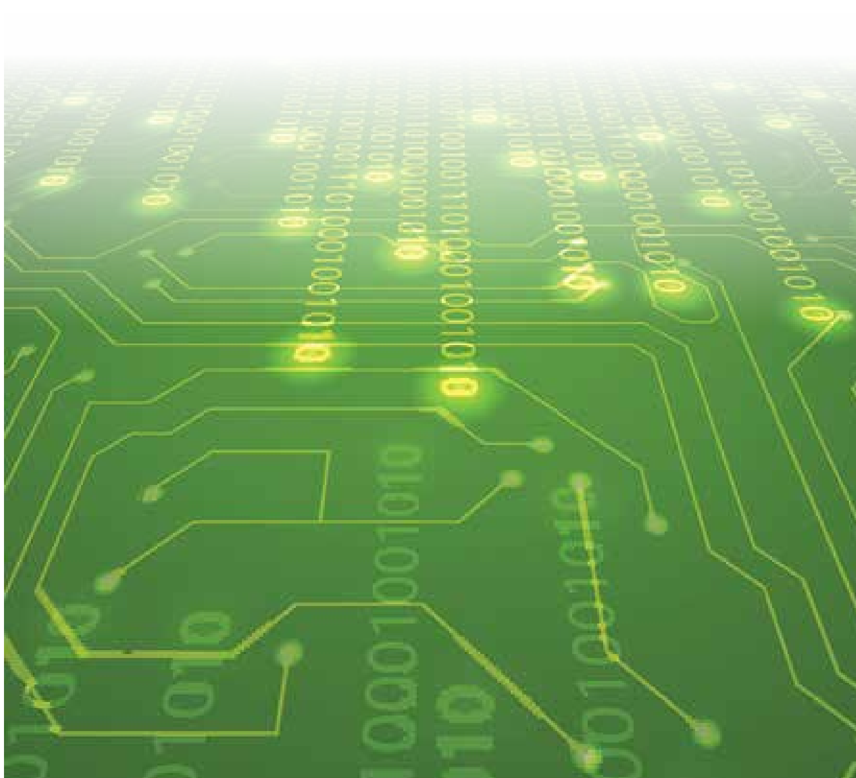
(c) Venture capitalist view of desired reward structure

The NRC (2004) asserted that for military systems, the fear of failure and accompanying penalties represent a key barrier to moving forward in transitioning new technologies. The NRC (2004) did not identify a single strategy that, if implemented, will accelerate insertion of new technologies into military systems. But, "it is more likely that the omission of a key element of the many needed will guarantee failure" (p. 2).

Flitter (2008) offered the notion that the best transition occurs when there is no perceived transition, but a seamless and continuous process from concept, development, test, production, and fielding of the technology.

Factors to be considered in evaluating technology transfer.

Albors-Garrigos, Hervas-Oliver, & Hidalgo (2009) analyzed mechanisms that influence the transfer and marketing of advanced technology and proposed a construct to explain how advanced technology is



transferred, diffused, and adopted by users in a firm. They used a value mapping methodology adapted to the case of advanced technology and determined that variables such as technology complexity, market barriers, and relationships between researchers, developers, and final users are critical to technology transfer.

Similarly, Choi (2009) found that for effective technology transfer, the technology provider needs to help change the adopters' perception of technology and consider the adopters' willingness to accept technology. Among the key factors to this acceptance are relationships and informal communication. In this process, the technology providers must play a key facilitating role and "should try to transfer to its adopters all resources and capabilities needed to use, modify, and generate the technology" (p. 55).

Iansiti and West (1997) surmise that a company's ability to choose technologies wisely has a large impact on the performance of its research and development organization in terms of time to market, productivity, and product quality. They identify technology integration as a methodology companies use to identify, refine, and then select technologies for employment in a new product, process, or service. They say the more effective organizations follow a process characterized by three factors, which include: (a) emphasizing technology integration activities, (b) following specific approaches to investigate the impact of novel technologies on product functionality and system performance, and (c) dedicating to the process personnel who had prior experience with technology integration and are knowledgeable about the organization's capabilities.

Literature Review of Technical Data Rights

A number of known issues surround the procurement and use of data rights. In reviewing the literature, included are both specific issues with data rights procurement identified in the literature and also a number of recommendations for improving the DoD management of data rights during weapon systems development. This section presents a summary of these two major areas of the literature.

The statutory and regulatory requirements for the government's technical data rights depend on included contract clauses as prescribed by the FAR (GSA et al., 2005). The clauses are from Subpart 52.2 and include 52.227-14 through 23 as prescribed by Subpart 27.4. In contracting for ATD projects, data rights clauses might include one or more of the following:

- FAR 52.227-14: Rights in Data—General
- FAR 52.227-15: *Representation of Limited Rights Data and Restricted Computer Software*
- FAR 52.227-16: *Additional Data Requirements*
- FAR 52.227-17: *Rights in Data—Special Works*
- FAR 52.227-18: *Rights in Data—Existing Works*
- FAR 52.227-19: *Commercial Computer Software License*
- FAR 52.227-23: *Rights to Proposal Data (Technical)*

Clauses 52.227-14, -15, and -16 will be the ones most typically utilized and deserve more detailed discussion. Under FAR 52.227-14, *Rights in Data–General*, the contractor protects proprietary data by withholding it or delivering it with restrictive markings specified by the FAR (GSA et al., 2005). The government receives unlimited rights for all data first produced in performance of the contract; form, fit and function data; and data delivered under the contract. Unlimited Rights include the right to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly, in any manner and for any purpose, and to have or permit others to do so. Exceptions are for limited rights data and restricted computer software. The contractor may withhold proprietary data and only has to deliver form, fit, and function information about the withheld data unless either the Limited Rights (Alternate II) or Restricted Computer Software (Alternate III) portions of the FAR clause are incorporated into the contract. Limited rights data embody trade secrets that the contractor protects by withholding from delivery unless the Limited Rights (Alternate II) provision of the clause is incorporated into the contract. In this case, the contractor must deliver the limited rights data, marked in specific terms, with how the government may use and share the data. These limited rights may be negotiated between the government and contractor. Restricted computer software is developed at private expense, which the contract protects by withholding unless the Restricted Rights (Alternate III) provision of the clause is incorporated into the contract. In this case, the contractor has to deliver the restricted computer software with markings that specify the limits of the government's use of the restricted computer software. The restricted rights may be negotiated between the government and contractor. Under FAR 52.227-14 and as prescribed by FAR Subpart 27.4, 27.406-1(c), the government does not normally require a contractor to provide unlimited data rights that otherwise would be limited rights or restricted computer software. FAR 52.227-15, Representation of Limited Rights Data and Restricted Computer Software, requires the contractor to identify data it intends to withhold or deliver with limited rights or restricted computer software. FAR 52.227-16, Additional Data Requirements, requires delivery of data not specified for delivery in the contract.

... the GAO (2006b) asserted DoD should strengthen policies for assessing technical data needs to support weapon systems since a crucial consideration in managing the life cycle of a weapon system is the availability of the item's technical data...

Known Data Rights Issues

The GAO (2006a; 2006b) reported on DoD's failure to obtain sufficient technical data rights for seven major weapon systems. In the report, the GAO made two major findings: (a) that the Army and Air Force's failure to obtain technical data rights in procuring certain weapon systems was found to have proven problematic as the Services try to sustain these weapon systems; and (b) that DoD's acquisition policies do not require obtaining technical data rights when procuring major weapon systems. Furthermore, the report cited the use of performance-based acquisition strategies by the DoD as obviating, as perceived by some in the DoD, the need for data or data rights.

Recommendations for Improving Data Rights Management in the DoD

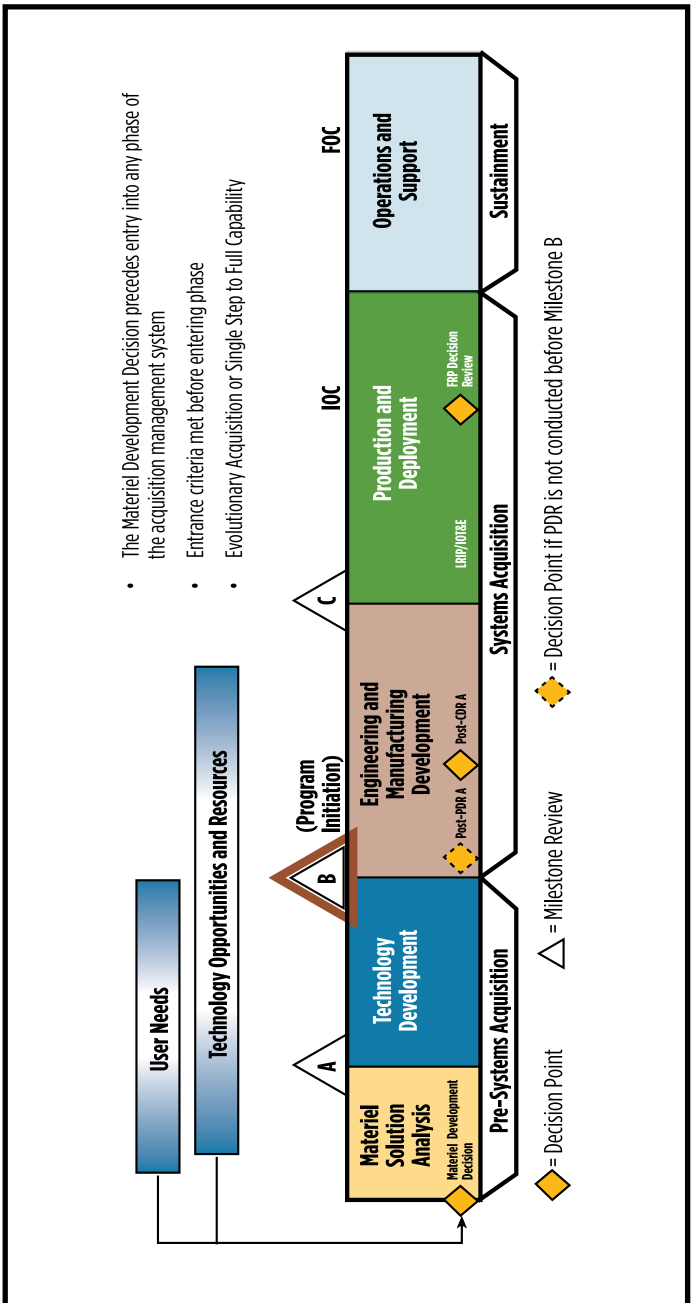
In its report, the GAO (2006b) asserted DoD should strengthen policies for assessing technical data needs to support weapon systems since a crucial consideration in managing the life cycle of a weapon system is the availability of the item's technical data, which is necessary to design and produce, support, operate, or maintain an item. Among the GAO's (2006b) recommendations were to "specifically require program managers to assess long-term technical data needs and establish corresponding acquisition strategies that provide for technical data rights needed to sustain weapon systems over their life cycle" (p. 19). It also recommended that the Secretary of Defense require that the GAO's recommendations be included in mandatory acquisition guidance, such as DoD Directive 5000.1 (DoD, 2003) and Interim DoD Instruction 5000.2 (DoD, 2013). The Interim DoD Instruction 5000.2 has incorporated these recommendations.

In discussing key elements of the Kendall (2010) memorandum, *Better Buying Power: Guidance for Obtaining Greater Efficiency and Productivity in Defense Spending*, Medlin and Frankston (2012) identify open systems architecture and the related acquisition of technical data rights as being integral to the engineering trade-off analysis that will be completed and presented at a program's Milestone B. The Milestone B is a Milestone Decision Review at the end of the Technology Development phase of a DoD program's acquisition life cycle, the purpose of which is to determine whether or not a program is ready to enter the Engineering, Manufacturing, and Development phase (Figure 2).

Medlin and Frankston (2012) describe the major purpose of an open architecture and the acquisition of technical data rights as necessary to "ensure the government has the right information to compete future contracts (i.e., design documentation, interfaces, tools, and information that can be shared with others)" (p. 32).

Conversely, Mazour (2009) argues that government contractors should be allowed to keep as many exclusive rights in technical data as possible and only provide the government with the minimum needed for government procurements.

FIGURE 2. ACQUISITION PROGRAM LIFE CYCLE



Note. CDR = Critical Design Review; FOC = Full Operating Capability; FRP = Full-Rate Production; IOC = Initial Operating Capability; IOT&E = Initial Operational Test & Evaluation; PDR = Preliminary Design Review; LRIP = Low Rate Initial Production.

Watts-Horton (2009) investigated factors in purchasing technical data, specifically in the context for the long-term sustainment of military systems. Among her findings were

- technical data rights have been confusing, ambiguous, and contradictory, and at times leading to misinterpretation;
- the DFARS (1998) is a complex set of regulations mostly understood by legal personnel, but lacking clarity of understanding in nonlegal terms;
- a lack of readily available data rights training pervades outside of the procurement functional domain; and
- financial pressures may be exerted to buy either more items or more capability in lieu of technical data rights.

Research Process

The research process utilized a survey to gather the requisite data. The AMSAA study, concluded in February 2013, examined the past 10 years of Army ATD projects to identify factors contributing to the transition, or anticipated transition, of a technology product to a PoR. The AMSAA study was inquiring about a number of key issues related to specific Army ATD programs, including specifically where technology was developed, if and how it was transitioned, and the effects of data rights ownership on how the Army managed its programs. Other factors examined in the AMSAA study included the types of technology transitioned, the size of the programs, the maturity of the programs, and the maturity of the technologies. Several different factors were discovered to have little effect on the likelihood of successful transition. AMSAA queried each PEO/PM identified by the U.S. Army Research, Development and Engineering Command as an ATD technology project customer. The identified customer PEOs included PEO Ammunition; PEO Aviation; PEO Combat Support & Combat Service Support; PEO Command, Control and Communications–Tactical; PEO Ground Combat Systems; PEO Intelligence, Electronic Warfare, and Sensors; PEO Missiles and Space; PEO Soldier; and PEO Simulation, Training and Instrumentation. The survey also requested information as to whether or not the project transitioned a product to a PEO/PM for use in a PoR.

Data Collection

Eighty-three questionnaires were distributed to the identified customer PEOs/PMs on October 23, 2012, requesting responses by November 16, 2012. Responses were received between November 16, 2012 and January 11, 2012. Of the 83 questionnaires distributed, 78 responses were received from the surveyed PEOs/PMs covering 71 different projects—a response rate of 86 percent. The PEOs/PMs could not provide input for 12 of the projects due to personnel losses and/or a lack of knowledge on the project.

Findings

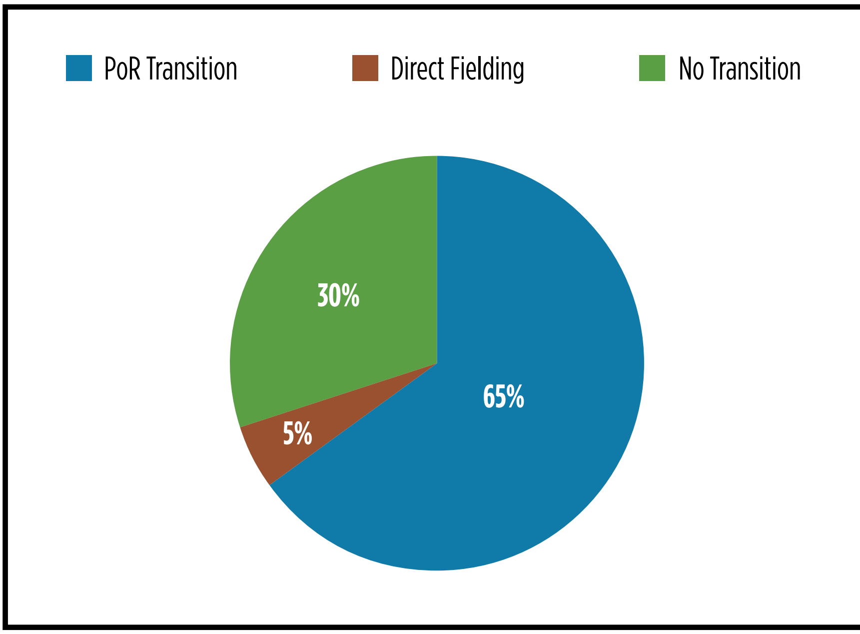
The objective of this research was to improve the understanding between Defense Acquisition Workforce and defense industry professionals engaged in the acquisition decision process, of the relationship between ownership of technical data rights and the transition of technology from the S&T community into PoRs.

Population & Sample Size

Eighty-three projects were included in the analysis when surveying PEOs/PMs via questionnaires. Of the 83 projects, the PEOs/PM provided survey responses on 71 separate projects. Of the 71 projects for which survey data were received, 40 were identified as transitioning a technology product to a customer's PoR. An additional four projects were identified as transitioning technology directly to the warfighter, either through a Quick Reaction Capability or Joint Urgent Operational Need executed by the PM, rather than through continued technology maturation and development as would be typical in the standard acquisition life cycle. These 71 projects form the underlying data set for the research analysis and findings.

After excluding the data determined to be meaningless, 57 projects remained to be included in the analysis. Figure 3 portrays the transition status for the projects included in the analysis and includes 37 projects transitioned to a PoR, three projects directly fielded, and 17 projects not transitioned.

FIGURE 3. S&T PROJECT TRANSITION STATUS



A top-level summary of the data rights associated with each project included in the analysis is provided in Table 1.

TABLE 1. SUMMARY OF TECHNICAL DATA RIGHTS OF SURVEYED PROJECTS

Transition Scope	Unlimited Rights	Limited Rights	No Rights
Program of Record Transition	12	23	2
Transition via Direct Fielding	3	0	0
No Transition	3	9	5

The S&T products provided to the PEO/PM recipients took various forms. The possible nature of the various products is categorized in Table 2. The form or nature of the S&T product that was provided to the recipient is identified in Table 3, which includes products transitioned to a PoR, products directly fielded, and those not transitioned.

Table 4 identifies the form of those products that had unlimited rights. Table 5 shows the form of those products that limited data rights. Table 6 identifies the form of the products with no data rights.

TABLE 2. FORMS OF S&T PRODUCTS

Form	Description
System	A complete, multi-component system that will be used or produced by the recipient
Hardware End Item	A materiel product that will be used or produced by the recipient
Component	A (sub-)component of the Hardware End Item
Software/Algorithm	
Knowledge Product	The knowledge product can take many sub-forms including: inform requirements (i.e. technology trade-offs); inform acquisition (inform AoA, specification for RFP); standards, certification or accreditation; data analysis or report (including M&S or assessment reports); Scientist & Engineering support for follow-on development; Training, Leadership or Education
People	Matrixed personnel or subject matter experts to a non-S&T organization for technical expertise/knowledge

TABLE 3. S&T PRODUCT FORM

Transition Scope	System	Hardware End Item	Component	Software, Algorithm	Knowledge Product
Program of Record	6	7	10	12	2
Direct Fielding	1	0	2	0	0
No Transition	3	1	9	1	3

TABLE 4. S&T PRODUCT FORM FOR PROJECTS WITH UNLIMITED DATA RIGHTS

Transition Scope	System	Hardware End Item	Component	Software, Algorithm	Knowledge Product
Program of Record	3	0	2	6	1
Direct Fielding	1	0	2	0	0
No Transition	0	0	3	0	0

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TABLE 5. S&T PRODUCT FORM FOR PROJECTS WITH LIMITED DATA RIGHTS

Transition Scope	System	Hardware End Item	Component	Software, Algorithm	Knowledge Product
Program of Record	2	7	8	6	0
Direct Fielding	0	0	0	0	0
No Transition	1	0	5	0	3

TABLE 6. S&T PRODUCT FORM FOR PROJECTS WITH NO DATA RIGHTS

Transition Scope	System	Hardware End Item	Component	Software, Algorithm	Knowledge Product
Program of Record	1	0	0	0	1
Direct Fielding	0	0	0	0	0
No Transition	2	1	1	1	0

Analysis

The collected data were analyzed by performing an analysis of variance (ANOVA) test calculated from the null hypothesis and the three sample groups consisting of unlimited rights, limited rights, and no rights. In each of the three groups, if a project transitioned it was assigned a value of 1, while a project that failed to transition was assigned a value of 0.

The ANOVA statistical test yielded an F statistic of 3.980 with a probability of the result, assuming the null hypothesis, of 0.024. The probability of the result is less than 0.05. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted, implying that government ownership of technical data rights makes a difference in technology transition (Krejcie & Morgan, 1970).

All PEOs and PMs and all "receiving" programs are not the same. As a practical matter, the receiving programs differ in at least two important parameters—size (and by inference, who gets to make decisions) and phase.

The majority of the programs in our study are Acquisition Category (ACAT II) programs, and the programs are, for the most part, in a pre-MS C phase. This is consistent with the fact that the majority of Army programs are not ACAT I programs, and that most technical data are generated early in the life cycle of most programs.

Conclusions

From the questionnaire responses of the ATD projects surveyed as part of this research, it becomes increasingly apparent that government ownership of technical data rights makes an important difference in the successful transition of technologies from the S&T community to PoRs. Success of transition is defined as "the specific new technologies being incorporated into the PoR." The government's understanding and that of the acquisition community at large, is that owning technical data rights increases the likelihood that technology will transition. Owning the data rights also enables the government to have greater flexibility for incorporating technology products in acquisition programs. Without ownership of technical data rights, the ability to transition technology is decreased, and the government will be constrained in its use of the technology products by the company owning the data rights.

Recommendations

From survey findings, this research reveals that government ownership of rights makes a difference in the transition of technology. To make effective use of this finding, three recommendations are offered:

- Increase collaboration between the S&T project office and the program management office that is the intended recipient of the technology. This will enable a better understanding of the PM's planned use of the technology, how the technology fits within the PM's road map, as well as how the data ownership thereof corresponds to the acquisition program's overall Technical Data Rights Strategy.

- Increase training and ensure S&T project office personnel (and program office and PEO staff) understand that buying technical data rights is a business decision that can ultimately impact technology transition.

- Prepare an overarching written Technology Agreement document to increase communication between the S&T project offices and PMs on the technical data rights approach. The discussion process that results in an agreed-upon Transition Agreement will help ensure that the S&T organization maintains a customer focus and that an open dialogue exists between the S&T community, as technology provider, and the PM, as technology adopter.

Although the results of this study seem to indicate the importance of data rights ownership to the successful transition of technology, additional research is needed to draw definitive conclusions about the larger set of Army and DoD programs.

Areas for Future Research

In order to learn more about the impact of data rights on the transition of technology, the authors recommend that future research expand the scope of programs studied, including an analysis of different measures of return on investment, and examine the effect of the class of system being developed. Specifically, we recommend the following six study areas as the next steps in the field of research:

Six Additional Areas are Suggested for Further Research

First, expand the projects researched beyond just ATDs since the S&T community also invests in, and develops technologies through, smaller programs.

Second, evaluate the effects of policy changes in the area of data rights on program success.

Third, evaluate the specific return on investment of investing in data rights.

... the research should be expanded to include our NATO and other allies who also negotiate data rights, both in their acquisition and in dealing with U.S. vendors when buying U.S.-developed systems.

Fourth, research whether program acquisition strategies clearly provide an appropriate data rights strategy for the S&T community to follow.

Fifth, research how the documented agreements between the S&T community as technology providers, and the PM community, as technology adopters, communicate the needed rights to enable technology transition and technology use in major defense acquisition programs.

The sixth and last area offered for additional research is to assess the effect the S&T product form (i.e., system, hardware, software, component, knowledge product, etc.) has on data rights appropriate for subsequent S&T project transition success. In addition, the research should be expanded to include our NATO and other allies who also negotiate data rights, both in their acquisition and in dealing with U.S. vendors when buying U.S.-developed systems.

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