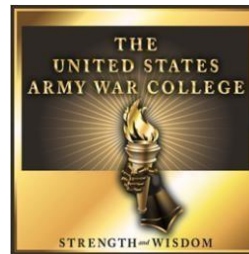


Challenges of International Cooperative Programs

by

Colonel Jonathan B. Slater
United States Army

Under the Direction of:
Colonel Benjamin M. Nutt



United States Army War College
Class of 2016

DISTRIBUTION STATEMENT: A

Approved for Public Release
Distribution is Unlimited

The views expressed herein are those of the author(s) and do not necessarily reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE				Form Approved--OMB No. 0704-0188	
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 01-04-2016		2. REPORT TYPE STRATEGY RESEARCH PROJECT		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Challenges of International Cooperative Programs				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Colonel Jonathan B. Slater United States Army				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Colonel Benjamin M. Nutt				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College, 122 Forbes Avenue, Carlisle, PA 17013				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Approved for Public Release. Distribution is Unlimited. Please consider submitting to DTIC for worldwide availability? YES: <input checked="" type="checkbox"/> or NO: <input type="checkbox"/> (student check one) Project Adviser recommends DTIC submission? YES: <input checked="" type="checkbox"/> or NO: <input type="checkbox"/> (PA check one)					
13. SUPPLEMENTARY NOTES Word Count: 6215					
14. ABSTRACT The United States will not go to war in the foreseeable future without allies and international partners by its side. It is critical for the Department of Defense (DoD) to continue to pursue International Cooperative programs to promote interoperability, improve logistics efficiencies, harness the best technological capabilities among allies, and reduce costs for systems procurement. This paper will discuss the DoD International Cooperation guidance, national power (Diplomatic, Informational, Military, and Economic) aspects of international cooperative programs, international considerations, DoD acquisition policy, and Congressional actions needed to further support international cooperative programs. There are challenges in all of these areas that need to be considered by a program manager and the requirements owner to ensure that policy directives are balanced with needs of the user. Ultimately, international cooperative acquisition programs pose many benefits to all nations involved, such as reduced costs, better operational interoperability, and stronger alliances that warrant the additional efforts required to execute an international program.					
15. SUBJECT TERMS Acquisition, Policy, International Armaments Cooperation, ITAR, Globalization					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 31	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER (w/ area code)

Challenges of International Cooperative Programs

(6215 words)

Abstract

The United States will not go to war in the foreseeable future without allies and international partners by its side. It is critical for the Department of Defense (DoD) to continue to pursue International Cooperative programs to promote interoperability, improve logistics efficiencies, harness the best technological capabilities among allies, and reduce costs for systems procurement. This paper will discuss the DoD International Cooperation guidance, national power (Diplomatic, Informational, Military, and Economic) aspects of international cooperative programs, international considerations, DoD acquisition policy, and Congressional actions needed to further support international cooperative programs. There are challenges in all of these areas that need to be considered by a program manager and the requirements owner to ensure that policy directives are balanced with needs of the user. Ultimately, international cooperative acquisition programs pose many benefits to all nations involved, such as reduced costs, better operational interoperability, and stronger alliances that warrant the additional efforts required to execute an international program.

Challenges of International Cooperative Programs

U.S. security for the twenty-first century (both militarily and industrially) requires a global strategy. In the future, virtually all security scenarios that affect the nation will involve other nations, and technology and industry will themselves be global.

—Jacque Gansler¹

United States (U.S.) Code, Title 10 and Department of Defense (DoD) acquisition policy states that program managers, “Shall pursue international armaments cooperation to the maximum extent feasible, consistent with sound business practice and with overall political, economic, technological, and national security goals of the United States.”² It must be acknowledged that there are challenges to establishing an international cooperative program, but these programs have been successfully executed in the past and the benefits justify the additional effort. International cooperative programs impact military interoperability, have multinational economic implications, and signal national intent in the international arena.

A fundamental understanding of the DoD acquisition process is necessary before embarking on the discussion of an international cooperative program. The DoD acquisition process is complex and is constrained by law, policy, and funding challenges. First, the process is founded on a validated requirement which addresses a capability gap. The requirement must then be approved through the Joint Capabilities Integration and Development System process. The requirement is ultimately prioritized against others for funding at the service department level. Once approved and funded, the program is initiated, proceeding through the acquisition phases of Materiel Solution Analysis, Technology Development, Engineering and Manufacturing Development and Demonstrations, and Production and Deployment. It is during the requirements

generation process and in early phases that DoD agencies should consider allies and partners in the pursuit of the new capability.

Complicating matters, the program manager is constrained by the DoD acquisition system and U.S. political agendas as well as international interests, and International Cooperation process knowhow thereby reducing the U.S. government's ability to capitalize on the strategic value of international cooperative programs. I contend that although the majority of the discussions of this paper are directed at DoD, the lessons are applicable to all branches of governmental acquisition. Whether applied by a single service, jointly, or between Inter-agency partners, savings can be realized, benefitting the U.S. taxpayer. Organizations such as the Department of Homeland Security, the Coast Guard, and Law Enforcement agencies have common capability requirements with other nations and between jurisdictions (federal/state/local) which could be addressed through a form of a Joint Interagency Intergovernmental and Multinational acquisition approach.

This paper will discuss the DoD International Cooperation guidance, national power (Diplomatic, Informational, Military, and Economic) aspects of international armaments programs, international considerations, DoD acquisition policy, and congressional actions needed to further support international cooperative programs. There are challenges in all of these areas that need to be considered by an agency's program manager and requirements owner to ensure that policy directives are balanced with the needs of the user. Ultimately, international cooperative acquisition programs pose many benefits to the nation, such as reduced costs, better interoperability, and stronger alliances.

International Cooperation Overview

To begin, it is necessary to understand what international cooperation is and its key aspects. The International Cooperation in Acquisition, Technology, and Logistics (AT&L) Handbook states “international cooperative programs involve (1) research, development, test, evaluation and/or production and logistics; (2) mutual and equitable sharing of effort, cost and risk; and (3) sharing of the resulting information, equipment or other benefits.”³ Furthermore, DoD instruction 2000.2 specifies that international cooperation can include, “Procurement of foreign technology, equipment, systems or logistics support.”⁴ It is a comprehensive process that enables greater technology, risk, and cost sharing among participants as well as provides incentives for participating nation’s defense industries.

Defense Security Cooperation is critical from a national power perspective and is therefore a priority across DoD. The U.S. government places such high priority on interoperability with allies and partners that DoD policies states that, “A cooperative development program with one or more allied nations is preferred to a new, joint, DoD Component or Government Agency development program, or DoD Component-unique development program.”⁵ Politically, international programs support diplomatic policy and bind the U.S. to its allies and partners. The International Cooperation in Acquisition, Technology and Logistics (IC in AT&L) Handbook presents the core objectives of International Cooperation in AT&L are:

- Operational - to increase military effectiveness through interoperability and partnership with allies and coalition partners,
- Economic - to reduce weapons acquisition cost and achieve Better Buying Power (BBP) by sharing costs and economies of scale, avoiding duplication of

development efforts; and achieving the cooperative production or sales of more weapons systems to our allies and friends,

- Technical - to access the best defense technology worldwide, and help minimize the capabilities gap with allies and coalition partners,
- Political – strengthen alliances and relationships with other friendly countries, and
- Industrial – bolster domestic and allied defense industrial bases.⁶

Unlike other forms of international programs, such as Foreign Military Sales (FMS), DoD and other participating nations are full partners in an international cooperative program, providing equitable sharing of program costs using appropriated funds, with the effort cooperatively managed by the DoD and a partner nation or nations to meet mutual requirements.⁷ A recent Defense AT&L article stated that, “In fiscal year 2010, DoD concluded 72 agreements for international cooperative programs at a total value of \$2.815 billion, [averaging \$1.072 billion of foreign funds—funds that otherwise would have been paid primarily by DoD].”⁸ Much of this was FMS and therefore are not the windfall they appear. The fact is, the U.S. carried the burden of all developmental costs. Further, from a budgeting process, DoD commits limited Program Objective Memorandum funds for these programs, diminishing opportunity to fund other programs. For example, if a pure DoD program had \$500 million dollars programmed for development of system X, all of that money comes from the DoD budget, however, if project X were an international program with cost sharing of say 60 percent U.S. and the remainder from foreign sources, DoD would have \$200 million available to fund other programs. The short term and long term financial implications are considerable. As defense budgets shrink around the world, international cooperative programs are becoming more imperative.

The U.S. has benefited both economically and operationally from international cooperative programs. Programs such as the F-35 Joint Strike Fighter (\$4.2 Billion to development), Wideband Global SATCOM, Excalibur Precision Guided. Long-Range 155 Artillery Projectile (\$67 million to development), Multiple Launch Rocket System, Advanced Medium Range Air-to-Air Missiles, and C-130J Block upgrades, all have proven the value of international cooperation.⁹ As the Department faces an increasingly challenging economic outlook, it is time to address acquisition decisions with emphasis on leveraging multinational efficiencies. A program manager must understand that there are opportunities to improve program affordability through international cooperation from initiation as well as during the program execution. The International Cooperation Handbook provides guidance on how an agency can approach bringing in international partners to the acquisition process at many levels as depicted in Figure 1 below.

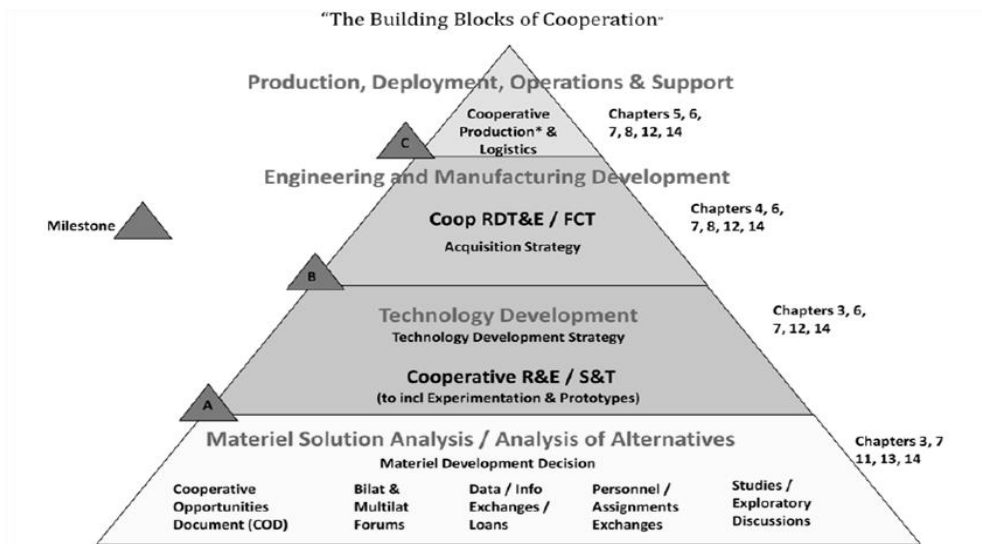


Figure 1. Building Blocks of International Cooperation in AT&L¹⁰

The handbook also cites the legal foundation for the activity as well as provides guidance and considerations based on the phase of the program. Although starting a program with international partners provides the most continuity for development of the

program, program managers and organizations need to look at all phases of the acquisition process for opportunities to bring in international partners. There are benefits for all involved and therefore opportunities to bring in others should not be discounted.

Lastly, the pace at which technological advances are occurring in the commercial sector are creating challenges for the department of defense. Adversaries are quickly adapting and leveraging commercial technology faster than DoD. Government agencies require rapid development and production of capabilities to keep pace with new gaps. As other nations are also working to meet these challenges, agencies must look to partner nations as potential sources for capability development. A foreign comparative test of an allies existing capability could prove beneficial and streamline access to a needed system through an international cooperative program.

As stated before, FMS is also a contributor to international cooperation but its effects are limited in program acquisition as it is applicable only post development. The developing country shoulders the Research, Development, Test, and Engineering (RDT&E) cost for programs before they are offered for FMS. If creating an International Cooperative Program is not feasible, FMS should be pursued.

National Power Impact

International Cooperation programs are a strategic consideration for all nations involved. All elements of national power (Diplomatic, Information, Military, and Economic) are impacted by international program. To improve the effectiveness in developing International Cooperation programs, DoD has established a Director, International Cooperation. The associated policies are coordinated by the Office of the Secretary of Defense: Office of the Under Secretary of Defense (OUSD) (Acquisition, Technology & Logistics)/International Cooperation and OUSD (Policy), Chief of Staff,

Director, International Security Programs and several OUSD (AT&L) offices. Next I will discuss how international cooperative programs contribute to national power.

First diplomatically, international programs are based on treaties and alliances. These legally binding agreements establish common interests and commitment. For example, the J-35 Joint Strike Fighter program was founded on the North Atlantic Treaty Organization (NATO) alliance between the U.S., the United Kingdom, Italy, Canada, Denmark, Norway, and the Netherlands, and the ANZUS treaty with Australia. The program participants further signed a Memorandum of Understanding with tiered levels of participation and responsibility. These actions formalize the agreement between the nations. Keith Hartley, in his article, *Defence Industrial Policy in a Military Alliance*, reinforces this requirement with his comment,

In the absence of some form of political union, member-states in a military alliance will be reluctant to adopt the principles of specialization, preferring to retain an independent military and defense industrial capability. Such behavior reflects a lack of trust that other member-states will 'honor their commitments' and also reflects divergent national interests within an alliance: each member is likely to have some national military objectives that are either not shared or only imperfectly shared with other member-states (e.g. policing its colonies; a world power role; national prestige).¹¹

The diplomatic basis of an international cooperative program is therefore extremely critical to any efforts success.

Informational aspects of an international program are multifaceted. Entering into a complex acquisition with international partners, signals to allies and potential adversaries, each nation's commitment to a long-term relationship both based on the logistical impacts of program and shared interoperability and common technological capabilities. Additionally, the capabilities of specific systems that are procured by partner countries can provide deterrence to potential adversaries based on known or

perceived strength a country acquires for its military. For example, international partnering on the F-35 Joint Strike Fighter (JSF) program, brings with its price tag the knowledge that the procuring nation is capable of significant overmatch capabilities in the air domain. Lastly, international programs provide participating nations the ability to join into military operations, such as the Syrian crisis, by sending limited resources and piggybacking on the multinational support infrastructure established by a partner nation. Both these examples demonstrate how participating countries can essentially become a relevant world power on the cheap.

The military aspect of international armaments cooperation is significant and rather apparent. First, countries have standardization and interoperability of systems capabilities which contributes to system commonality in war planning and logistic support efficiencies. When allies and partners' equipment uses the same round, or fuel, or repair parts, shared support functions will yield significant savings. Commonality in equipment capabilities gives the Combatant Commander confidence in planning assumptions and operational employment. During Operation Desert Storm, it was common knowledge that several of the coalition partners had inadequate systems and were therefore taken out of the planning consideration, ultimately putting additional responsibility on the U.S. forces. Next, an international program should bring the greatest technological advance available between the participating countries to the program. International Industry partners bring expertise to the table, which is leveraged across all participating countries systems. The U.S. government is no longer the research and development (R&D) leader. Industry now represents 75 percent of the national R&D and cumulatively global R&D is more than double that of the United

States.¹² Congress acknowledged in the 2016 National Defense Authorization Act (NDAA) that, “The defense acquisition system must enable the Department to take advantage of the best minds, firms, and technologies that America, and the world, have to offer.”¹³ To continue to be the world military super power, the U.S. must make use of all resources available.

And finally, from an economic perspective, international programs offer countries the opportunity to reduce production cost, through combined production, as well as development cost reduction through cost sharing. Participating countries win development and production contracts, through work sharing agreement, to their respective countries which result in local employment. When accounting for operation, maintenance, spare parts, and sustainment support for the system, employment opportunities can continue for up to thirty years. Work share can be accomplished through several different methods. Countries may have a percentage of work contracted domestically in proportion to the number of systems procured or through allocating operations such as final assembly plants in their nation. Another option, which has been implemented by the J-35, is to implement a “best value” competition between each country’s qualified industries. The sub-contractor industries, from all partner countries, were allowed to compete on a best value basis (performance and price). The three U.S. prime contractors, Lockheed-Martin, Northrop-Grumman, and Pratt & Whitney, selected the sub-contractors. These sub-contractors were then able to establish development and production facilities in their home countries, benefiting their local economies.¹⁴ For example, LM estimates that, “In the United Kingdom alone...the Joint Strike Fighter team will create approximately 3,400 jobs during System Design and Development and

during the thirty years of production and support phases, 8,400 direct, and many thousand indirect long term, highly skilled, highly paid jobs will be crated.”¹⁵

Countries need to be aware of and consider the risks and responsibilities inherent in an international cooperative program. The table below highlights several stakeholders considerations. All programs are subject to funding challenges both in execution (cost overruns) and from national budgetary processes. This poses compound financial risk to each nation as each make decision during the development and production phases that effect the final product. For example, the Average Procurement Unit Cost will increase for all items produced if one nation reduces its procurement quantities. The military alliance therefore must be willing to assume this risk, in order to agree to a burden-sharing arrangement that provides incentives for achieving collective efficiency.¹⁶

Table 1. Responsibilities and Risk of International Programs¹⁷

Stakeholders	Interests	Responsibilities	Risks
Congress	Shared costs and risks	Authorization and appropriation of funds	Cost overruns Technology Transfer
COCOMS	U.S./coalition Capabilities Interoperability	Requirements Recommend coalition capabilities	Rogue nations that obtain high technology capabilities
Services	Capabilities Interoperability Costs	POM, advocate, organize, train, equip	Cost overruns Vanishing international vendors
Program Manger	Cost/Schedule/Performance	Program Objectives Key Performance Parameters	Cost overruns Defecting Partners
Partners	Capabilities Interoperability Technology Transfer Work share	Monetary contributions Define requirements Memoranda of Understanding	Initial Investment Arms (parts) embargo if relationship deteriorates Not securing work share
Prime Contractor	Cost/Schedule/Performance Key Performance Parameters	ROI Manager Partner Expectations Equitable work share within rule set	Initial Investment Defecting Partners

Lastly, it is necessary to acknowledge that globalization is increasing the United States reliance on other countries for both raw materials and manufactured goods.

There has been a misconception that U.S. defense systems have always been

manufactured in the U.S. and that the nation is self-reliant. Quite the opposite is true. U.S. reliance on foreign materials for our national defense has been a fundamental part of our industrial history since the Revolutionary War. Therefore, to pursue international cooperative programs is only a natural extension of that history. Today, the manufacturing that produces many critical technologies, such as electronic parts and micro-processors are in foreign lands. And almost every weapon system built by the United States contains international parts or components. Furthermore, the U.S. has leveraged technology developed by partner nations in the past with limited risk as argued by Jacque Gansler, former Under Secretary for Defense for Acquisition, Technology, and Logistics 1997-2001, that, "Many (systems) are based on foreign design."¹⁸ This interdependency with partner nations is natural and required for our nations success.

U.S. Domestic Challenges

Although there is significant push under U.S. Code Title 10 to pursue international cooperative programs, there are other U.S. laws and political practices that do not support international programs. The program manager must consider constraints such as the Buy American Act, Earmarks, and Department of State policies to determine the feasibility for pursuing an international cooperation program.

The International Cooperation handbook acknowledges,

The DoD programs work within a system constrained by laws and regulations that discriminate against acquisition of non-U.S. products. The Buy American Act requires 50 percent U.S. content, the Berry Amendment affects procurement of food, clothing, or hand measuring tools, the specialty metals restriction, and the annual Appropriations Act contain provisions restricting procurement of certain items to only U.S. sources.¹⁹

These challenges are managed by domestic contractors as they and their subcontractors routinely must use the global supplier base.

It is clear that the Buy American Act has had a harmful effect on the DoD's ability to forge multilateral development projects with its protectionist policies established prior to World War II.²⁰ Additionally, government programs and policies established to protect critical technologies prior to the technology boom of the 1990s and 2000s are constraining the U.S. ability to quickly leverage emerging technologies from partners. Accordingly, the Government Accountability Office (GAO), identifies "the effective identification and protection of critical technologies (foreign and domestic) as a government-wide high-risk area," and recommends, "A strategic re-examination of existing programs to identify needed changes and ensure the advancement of U.S. interests."²¹

In an effort to reduce the effects of some protectionist and outdated policies, DoD has entered into Reciprocal Defense Procurement Memoranda of Understanding with NATO member and other allied and friendly governments. These international agreements are intended to promote rationalization, standardization, and interoperability of military equipment.²² Additionally, the U.S., Australia, and the United Kingdom entered into the United Kingdom Defense Trade Cooperation Treaties to provide greater access and sharing of equipment, technology, information and services between each country.²³ These efforts are a good start but more work is needed by congress and the State Department to empower the product manager to gain access to cutting edge technology and potentially reduce acquisition costs.

Lastly, the State Department has an active role in the acquisition process through processing export licenses for equipment. A problem exists in this process because the State Department generally defers to DoD to establish the scope and content of militarily critical technologies opposed to being part of the determination process.²⁴ This is a shortcoming because, although the acquisition community does have an International Acquisition Career (IAC) path, there is limited availability of these resources (trained personnel) at the Program Executive Office (PEO) and down to individual program offices. This results in the DoD input to scope and content for export licensing lacking. PEO's need to increase the number of IAC trained and certified personnel on their staffs and direct a more thorough assessment of programs for international opportunities.

DoD Acquisition Policy Changes

Acquisition policies and funding practices create an unstable and contentious environment that makes international programs high risk. In an effort to add more control to the process, Congress directed changes to acquisition policy as well as gave the Service Chiefs authority over most of the acquisition process.

The 2016 NDAA gave the Service Chiefs responsibility for decisions regarding the balancing of resources and priorities, and associated tradeoffs among cost, schedule, technical feasibility, and performance on major defense acquisition programs.²⁵ There is concern over non-acquisition professionals influencing a system that they do not understand fully which could impact program success negatively. Highlighting this concern, early in 2015, Mr. Frank Kendall, the Under Secretary for Defense for Acquisition, Technology, and Logistics (USD, AT&L), said, "We need to be careful about what we ask the Service Chiefs to do. They do not have expertise in

technology or program management or testing. They don't come from those communities, and we are a professional community."²⁶ Contradictorily, this may be a positive move as the Services control their budget decisions and the requirements process, therefore have more direct control over the two biggest portions of the acquisition process.

Additionally in the 2016 NDAA, Congress directed that programs, under service control, which incur a Nunn-McCurdy breach (greater than 15 percent cost growth), would transfer back to USD, AT&L control. Furthermore it would require the services to pay penalties of 3 percent of the overrun. These penalties would pay into a fund controlled by AT&L for prototyping.²⁷ This process can have both positive and negative effects. First, a program which is under performing will lose funding and therefore reduce its ability to recover. Secondly, having a new resource for funding prototypes may very well advance other needed capabilities. Time will tell if this change will improve the acquisition process.

On a positive note, Congress made changes to provide new flexibility to the acquisition process. The 2016 NDAA direction aims at having DoD formalize rapid acquisition processes and create waiver authority for two-to-five-year programs to allow foreign purchases.²⁸ This act will provide greater opportunity to pursuing international cooperative programs under a much reduced timeline. There will be new challenges with this process that will require an international framework for things like contract actions, data rights, and production decision will need to be agreed upon in order to make the process effective under the reduced timeline.

As stated above, the Service Chiefs will have responsibility for budgeting and prioritization. The DoD receives a budget every year which never meets all of its needs. DoD must make the decision what to fund and where to cut. Typically, there are more cuts than can be reasonably absorbed and programs must be prioritized based on requirement and performance of the program. This can have a very significant impact on the long-term execution of a program. Cutting funding early from programs typically results in increased costs and significant production delays. Studies have suggested that for every \$1 cut in a current year, an additional \$4 of cost will be added in the out-years.²⁹ With this type of cost deferment, problems will only be compounded in the future and therefore is a critical consideration of an international program.

It is also worthy to note that while Service Chiefs have had significant influence on some acquisition programs in the past, their close involvement does not guarantee successful cost, schedule, or performance results. For example, Service Chiefs had significant involvement in the Navy's Littoral Combat Ship and the Army's Future Combat System which both had development problems. Due to these capabilities having high priority, the programs pursued aggressive acquisition strategies. Contributing to the program challenges, GAO findings argue that the programs had unclear requirements and immature designs, which drove excessive cost increases and schedule slips.³⁰ The unrealistic requirements approved in the Capabilities Development Document compounded with the funding instability mentioned previously cause most programs to execute under a relatively high risk framework. With these examples, it is naïve to presume the inherent challenges of the acquisition process will not be corrected simply by giving responsibility to an already busy Service Chief.

Lastly, in another GAO report, a Service Chief noted that “the acquisition workforce lacks experience in operational and tactical settings and that his requirements community lacks technical acquisition skills, so it is important that collaboration regularly occurs between the two communities.”³¹ Further, another Chief emphasized that “requirements officers are too dependent upon the acquisition community and its contractors to work out requirements.”³² The lack of tactical and acquisition process specific training is rampant in the DoD process with short career tours and limited training for decision makers. This issue is observed in both the U.S. and international acquisition systems. The acquisition system is complex and each program is unique, therefore continual personnel training is required. Service Chiefs will have to make addressing these shortcomings a priority in order to make them effective.

International Considerations

In looking into an international cooperative program, the international environment needs to be assessed. There are existing alliances, both political and industry based, other governmental influences on industry, as well as U.S. governmental position in world affairs that will impact the international cooperation opportunities. This will change over time based on nation’s interests, industry’s interests and technology advancements.

Globalization is causing the international markets to change increasing cross border opportunities. Several nations have created financial incentives to lure high-tech defense firms (particularly from the United States) to their countries.³³ Additionally many countries value their defense industry as a national resource, whether nationalized or not and have in the past protected their operations. However, in recent years, the European Union (EU) has initiated a series of important regulatory reforms with the aim

of removing bureaucratic impediments and integrating Europe's defense market.³⁴ The success of these reforms will make the European defense market more competitive and open. The Center for Strategic and International Studies also collaborates that, "Changes unfolding in the European defense market- on the demand and supply side as well as in the regulatory domain- are creating opportunities to free up and reallocate defense resources and to expand collaborative procurement and research and development (R&D) programs."³⁵ This is a positive step with so many nations being NATO partners

France, Germany, Italy, and the United Kingdom created a four-nation armaments agency called the Organization for joint Armaments Cooperation in 1996, to facilitate collaborative projects, and in 2004, the European Defense Agency was created to expand this collaboration to all EU member states.³⁶ European industrial alliances also exist that were formed for the development and production of combat and transport aircraft, helicopters and missiles. Although the above agreements pull the European Union together, each state still has the authority to protect its national defense industries under Article 296 of the EU Treaty (previously Article 223).³⁷

It is also critical to consider that within the world defense industrial marketplace there remains considerable opportunity for competition. This competition provides opportunity for U.S. defense contractors to both partner and subcontract with "best value" firms to provide a competitive response to U.S. defense acquisition requirements. The chart below shows, by sector, the industry options available to bid international programs to get both best value and most competitive response from industry. When looking at the opportunities for competition and gaining best value, a rational actor

model indicates that international cooperative programs are the right approach for the U.S. government.

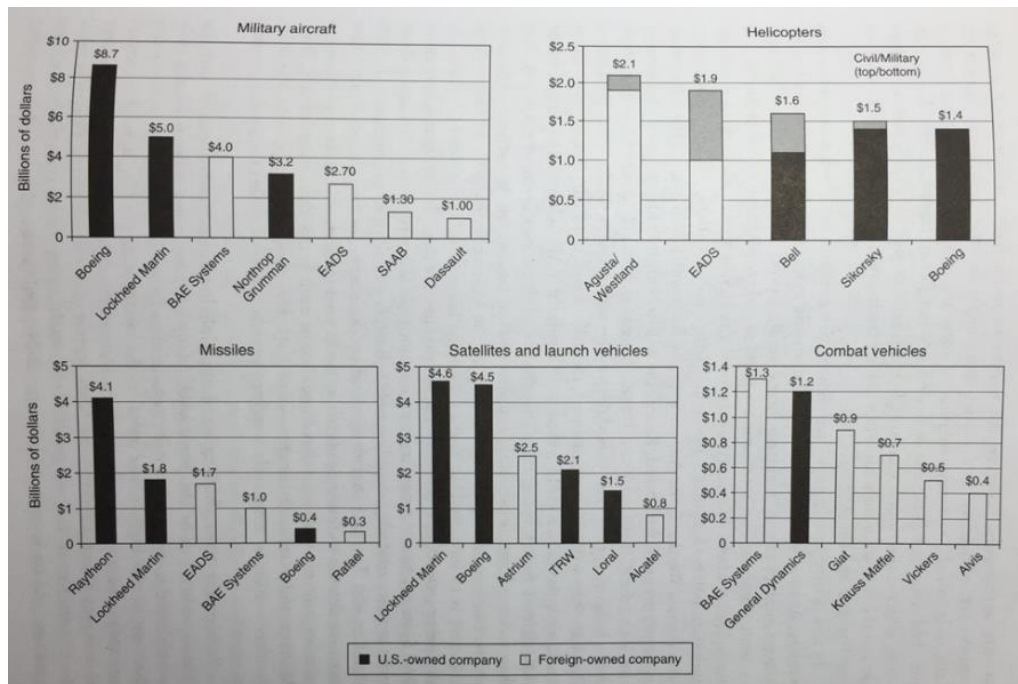


Figure 2. Existing U.S. and European Suppliers at the Platform Level³⁸

Additionally, Congress encourages the procurement of defense equipment from U.S. allies to reduce redundant research and development efforts. Congress funds the Foreign Comparative Testing program to facilitate testing and acquisition of foreign-developed products for non-developmental items that meet DoD requirements. This program has resulted in substantial time and cost savings through avoidance of costly development programs. Often a foreign-developed product will be produced in the U.S. under license. The IC handbook gives the following examples of such products:

- Rheinmetall 120mm tank gun used on the M1A1 Main Battle Tank,
- Beretta 9mm pistol, the AV-8B Harrier aircraft,
- Mark 92 naval fire control radar,
- Oto Melara 76mm naval gun, the T-45 trainer, and

- Joint Navy/Air Force trainer (JPATS - Joint Primary Aircraft Training System).³⁹

Industry has been working as international corporations for years and has worked through many of the challenges of cross border operations. With the consolidation of the U.S. defense industrial base as well as international leaders in defense segments, industry has figured out how to compete in all market places for the dwindling share of defense dollars. Many have partnered in development and production contracts. For example, Lockheed Martin Corporation (LM) established working relationships and practices with aviation sub-contractors throughout the world during the development and production of the F-16 program. These corporate relationships should improve the transition to the F-35 JSF partnership reducing challenges for LM. Ultimately, existing relationships like this should make a more effective defense industrial cooperation from a cost and benefit standpoint.⁴⁰

Lastly, the international community understands the value associated with U.S. programs and attempts to stay aligned with the U.S. defense capabilities. For example, the International Journal reports that, "For many international partners, the initial attractiveness of the F-35 program lay in its promise to keep the partners firmly located within the US-led industrial and high-tech networks, while providing partners with relatively cheap access to the latest generation stealth technology."⁴¹ It is understood that cost overruns and delivery delays of a multinational program, like the F-35, are a constant worry for participating nations. The partner nations accept the risk that ultimately, the U.S. government will determine both the quantity and price for the final product. This leaves the partner nations with challenges for budgeting, scheduling of capability for their forces, and could potentially lead to political disputes, both internal

and with the U.S. government. In international cooperative programs, there is risk that must be managed by both the U.S. and partner countries.

Congressional Actions Needed

Congress has acknowledged the benefits of cooperating with allies in systems development and acquisition. As well as from foreign military sales for economic and foreign policy reasons.

To ensure these benefits are realized, there are clear mandates in U.S. law and DoD directives to consider international programs:

- Title 10 U.S.C. 2350a(e) requires an analysis of potential opportunities for international cooperation before the first milestone or decision point on programs reviewed by the Defense Acquisition Board.
- DoDD 5000.01 and DoDI 5000.02 state: —Program managers shall pursue international armaments cooperation to the maximum extent feasible, consistent with sound business practice and with the overall political, economic, technological, and national security goals of the United States. (DoD 5000.01, Enclosure 1, paragraph E1.1.1).⁴²

Although, Congress has placed provisions and given directions to the acquisition community, there is more action necessary at the governmental level. Congress needs to work with our international partners to agree upon bilateral and multilateral trade conditions, specifically addressing international cooperative programs as a whole. Agreements need to be gained on defense off-sets, U.S. domestic sourcing requirements, and ways to take advantage of commercial technologies.

Defense offsets, which have a negative impact on U.S. defense industry, are arrangements in which the purchasing government of the importing country forces the supplying company of the exporting country to reinvest some proportion of the contract cost back into the importing country.⁴³ The Department of Commerce states that in an

average international contract, a U.S. vendor agrees to an offset valued at 63.5 percent of the price of the defense sales contract.⁴⁴

Additionally, Transparency International claims that “these defense offsets tend to be used as industrial policy tools by governments to influence the country’s economic development through targeted interventions.”⁴⁵ As a result, since 2004, the USD (AT&L) Director, International Cooperation, has been leading an interagency team, and an interagency working group to work with foreign nations on controlling the adverse effects of offsets in defense procurement. The intent of these talks is to prevent damaging the U.S. economy and defense industrial base.

The interagency team is comprised of the Secretaries of Commerce, Defense, Labor, and State, and the U.S. Trade Representative.⁴⁶ The issues of foreign offsets remain a persistent problem, as noted in a recent opening statement by Representative Hunter to the Committee on Armed Services, stating,

Our close allies and trading partners cry foul when the Congress seeks to ensure the capability of our defense supply base with a 50 percent domestic source requirement in the Buy American Act and then disingenuously ignore the fact that they apply 200 percent offsets to their own purchases. ‘So we face a very complex problem that once was small but now has reached a level that demands that it be brought under control.’⁴⁷

Although offsets have existed for a long time and industry has figured ways to work within these confines, the offset process is counterproductive to establishing mutual trust and equity in the diplomatic realm.

Lastly, Congress needs to address several domestic issues to improve the U.S. ability to improve the acquisition process and facilitate international cooperation.

Jacques Gansler, also a noted expert in defense acquisition, in several books and reports to Congress, provides recommendations to improve the country’s industrial

capabilities. He states that “the DoD must take advantage of this commercial R&D- domestically and globally. This means removing many of the current legislative and regulatory barriers that prevent commercial firms from doing DoD R&D and prevents the DoD from using commercial products (in spite of both their higher performance and their lower costs).”⁴⁸ He also states, “If the government is going to take advantage of the large R&D investments that are made by commercial firms (as potential adversaries are already doing), then it needs to remove these barriers and learn to do business in far more of a commercial fashion when dealing with these nontraditional, normally lower-tier, suppliers.”⁴⁹ The acquisition community needs the support of Congress to improve the internal processes and increase international opportunities. Through a more open market, the U.S. leadership in defense technology will be maintained, strengthening the U.S., its allies, and partners.

Counter Argument

Critics to pursuing programs produced with non-US based companies or technology argue that the U.S. is putting U.S. Soldiers at risk with inferior products as well as taking jobs away from U.S. companies. That is not the fact. A study of the impact of foreign sources on systems by the Deputy, Undersecretary of Defense for Industrial Policy showed that the use of foreign sources has not negatively impacted long-term readiness or national security. The study states,

In fact the use of non-U.S. suppliers: (1) permits the Department to access state-of-the-art technologies and industrial capabilities; (2) promotes consistency and fairness in dealing with U.S. allies; (3) encourages development of interoperable weapons systems; (4) encourages development of mutually beneficial industrial linkages that enhance U.S. industry's access to global markets; and (5) exposes U.S. industry to international competition, helping to ensure that U.S. firms remain innovative and efficient.⁵⁰

For example, the U.S. leveraged the Rheinmetall 120mm tank gun for the M1 tank instead of developing an alternative large caliber gun tube, as several U.S. officers proposed. Based on my professional experience, this decision saved the M1 program several years of development time and millions in RDT&E dollars. The ability to use an allied partner's technology enabled the U.S. to exceed threat capabilities and quickly field the force.

In addition, in many high-technology areas, the U.S. is no longer the leader in the next generation of products, U.S. programs and companies need international cooperative agreements to gain access to the new technology.⁵¹ Further, the U.S., with an international cooperative program, may be able to afford, through shared funding, to develop a new capability that it could not afford on its own. Subsequently, there is the potential for the U.S. and partner nations to recoup development costs later through foreign military sales of that equipment after it has been jointly developed. From an economic point, the U.S. defense industry has been aided by the sales of military equipment to the world market. The U.S. has successfully made direct sales and foreign military sales over the life of many programs which both benefited industry and has promoted interoperability.⁵²

Keith Hartley also states, that compared with the U.S. defense industrial model, "EU defense markets are inefficient in the provision of both military forces and defense equipment. Europe is characterized by duplication of armed forces (e.g. ministries; training; logistics; bases), defense R&D and industrial capabilities, all based on relatively small national markets for 25 member-states."⁵³ Therefore, the U.S. is not

giving up any of its abilities or position by joining with allies to develop next generation capable systems. The venture is truly a win-win for all involved.

Concerns have been raised about the globalization of the U.S. national security industrial base. These concerns can be addressed through the provisions the U.S. places on international programs including, requiring U.S. subsidiaries with separate boards, separate network systems and the requirement for U.S. citizens, with appropriate clearance, to work the program. It is also necessary in programs where transparency of technical and economic operations may exist, firewalls between the operating units will be required. The potential benefits of this globalized industrial base will far exceed the possible risks. These benefits include; enhanced military capability, economic benefit, and enhanced competition.⁵⁴

Conclusion

In conclusion, it is clear that for the U.S. and partner nations to acquire costly, state of the art capabilities, they need both financial resources and access to the best technology. Through international cooperative programs, participating nations can reduce their financial burden and expand their access to technology. In the current times of financial constraint, felt by all countries, international cooperation is the realist approach to addressing these challenges.

While the issue national dependency might prevent specialization in military forces within an alliance, there are incentives for partner nations to seek expertise in other areas, such as producing unique defense components as an option. Some of this type of specialization already exists, for example, Germany is known for fine optics. This approach depends on significant differences in comparative advantage offering mutual

gains from specialization and free trade, with such gains reinforced through scales economy.⁵⁵

Lastly, the Capstone Concept for Joint Operations highlights the importance of international cooperative programs,

Globally integrated operations place a premium on partnering. This allows expertise and resources existing outside the U.S. military to be better integrated in a variety of operational contexts. The complex security challenges of the future almost invariably will require more than the military instrument of national power. Joint Forces must be able to integrate effectively with U.S. governmental agencies, partner militaries, and indigenous and regional stakeholders.⁵⁶

The United States cannot afford to go it alone in national defense of national security. The U.S. must embrace the international cooperative programs approach in DoD and the national agencies in which we have strong partners and common end-states, such as defeating state and non-state actors, stopping criminal elements, and addressing humanitarian efforts. The international cooperative program can be a win-win for all who participate.

Endnotes

¹ Jacques S. Gansler, *Democracy's Arsenal: Creating a Twenty-first-Century Defense Industry* (Cambridge, MA: MIT Press, 2011), 307.

² U.S. Department of Defense, *Defense Acquisition System*, DoD 5000.01 (Washington, DC: U.S. Department of Defense, May 12, 2003), enclosure 1, paragraph E1.1.1, 2007.

³ Office of the Director for International Cooperation, *International Cooperation in Acquisition, Technology and Logistics (IC in AT&L) Handbook*, 7th ed. (Washington, DC: Office of the Director for International Cooperation, May 2012), 8.

⁴ U.S. Department of Defense, *Cooperative Logistics Supply Support Arrangements*, DoD Instruction 2000.20 (Washington, DC: U.S. Department of Defense, August 29, 2005).

⁵ Office of the Director for International Cooperation, *International Cooperation in Acquisition, Technology and Logistics*, 12.

⁶ Ibid., 3.

⁷ Craig J. Mallory, "International Programs Contribute To Affordability," *Defense AT&L* 40, no. 5 (2011): 59.

⁸ Ibid.

⁹ Ibid.

¹⁰ Office of the Director for International Cooperation, *International Cooperation in Acquisition, Technology and Logistics*, 6.

¹¹ Keith Hartley, "Defence Industrial Policy in a Military Alliance," *Journal of Peace Research* 43, no. 4 (2006): 473-489.

¹² *National Defense Authorization Act of 2016*, Public Law 1356, 114th Cong., 1st sess. (November 30, 2015), 164.

¹³ Ibid.

¹⁴ S. G. Di Domenico, *International Armament Cooperative Programs: Benefits, Liabilities, and Self-Inflicted Wounds - The JSF as a Case Study* (Maxwell AFB, AL: Air War College, Center for Strategy and Technical Center, 2006).

¹⁵ Lockheed Martin, *Lockheed Martin Team Wins Joint Strike Fighter Competition Press Release* (Bethesda, MD: Lockheed Martin, October 26, 2001).

¹⁶ Hartley, "Defence Industrial Policy in a Military Alliance," 473-489.

¹⁷ Di Domenico, *International Armament Cooperative Programs*.

¹⁸ Gansler, *Democracy's Arsenal*, 17.

¹⁹ Office of the Director for International Cooperation, *International Cooperation in Acquisition, Technology and Logistics*, 112.

²⁰ J.S. Smyth, "Impact of the Buy American Act on Program Managers, National Technical Information Service," *Acquisition Review Quarterly*, Summer 1999, 263.

²¹ U.S. Government Accountability Office, *High-Risk Series: An Update* (Washington, DC: U.S. Government Accountability Office, January 2007), 26.

²² Office of the Director for International Cooperation, *International Cooperation in Acquisition, Technology and Logistics*, 112.

²³ Ibid.

²⁴ Richard D. Kruger, *Technology Transfer and U.S. National Security Policy: The Joint Strike Fighter* (Fairfax, VA: George Mason University, 2010), 297.

²⁵ *National Defense Authorization Act of 2016*, 166.

²⁶ Scott Maucione, "Kendall Voluntarily Loosens Grip on Some Acquisition Powers," *federalnewsradio.com*, September 18, 2015, <http://federalnewsradio.com/defense/2015/09/kendall-voluntarily-loosens-grip-acquisition-powers/> (accessed March 24, 2016).

²⁷ Ibid.

²⁸ Aaron Mehta and Joe Gould, "McCain Wins Big With Acquisition Reform," *Defense News*, October 5, 2015, <http://www.defensenews.com/story/defense/policy-budget/2015/10/05/mccain-wins-big-acquisition-reform/73217188/> (accessed March 24, 2016).

²⁹ Di Domenico, *International Armament Cooperative Programs*.

³⁰ U.S. Government Accountability Office, *Military Service Chiefs' Views on Acquisition*, GAO-15-469 (Washington, DC: U.S. Government Accountability Office, June 11, 2015).

³¹ Ibid.

³² Ibid.

³³ Gansler, *Democracy's Arsenal*, 307.

³⁴ Center for Strategic International Studies, *European Defense Trends, Budgets, Regulatory Frameworks, and the Industrial Base* (Washington, DC: Center for Strategic International Studies, November 2010), Executive Summary-X.

³⁵ Ibid.

³⁶ Hartley, "Defence Industrial Policy in a Military Alliance," 473-489.

³⁷ Ibid.

³⁸ "Government Executive," August 15, 2007, in Gansler, *Democracy's Arsenal*, 63.

³⁹ Office of the Director for International Cooperation, *International Cooperation in Acquisition, Technology and Logistics*, 113.

⁴⁰ Richard D. Kruger, *Technology Transfer and U.S. National Security Policy: The Joint Strike Fighter* (Fairfax, VA: George Mason University, 2010), 280.

⁴¹ Srdjan Vucetic and Kim Richard Nossal, "The International Politics of the F-35 Joint Strike Fighter," *International Journal*, Winter 2012-2013.

⁴² Mallory, "International Programs Contribute To Affordability."

⁴³ Transparency International, *Defence Offsets: Addressing the Risks of Corruption & Raising Transparency 18* (London: Transparency International, 2010), 43.

⁴⁴ U.S. Department of Commerce, *Offsets in Defense Trade: Sixteenth Study* (Washington, DC: U.S. Department of Commerce, 2012).

⁴⁵ Transparency International, *Defence Offsets: Addressing the Risks of Corruption & Raising Transparency* 18, 43.

⁴⁶ Office of the Director for International Cooperation, *International Cooperation in Acquisition, Technology and Logistics*, 118.

⁴⁷ U.S. Congress, House of Representatives, Committee on Armed Services, *Hon. Duncan Hunter (chairman of the committee) Presiding; and Opening Statement*, 108th Cong., 2nd sess., June 17, 2004.

⁴⁸ Gansler, *Democracy's Arsenal*, 256.

⁴⁹ *Ibid.*, 271.

⁵⁰ Office of the Deputy Undersecretary of Defense for Industrial Policy, *Study on Impact of Foreign Sourcing of Systems* (Washington, DC: Office of the Deputy Undersecretary of Defense for Industrial Policy, January 2004).

⁵¹ Gansler, *Democracy's Arsenal*, 57.

⁵² *Ibid.*, 149.

⁵³ Hartley, "Defence Industrial Policy in a Military Alliance," 473-489.

⁵⁴ Gansler, *Democracy's Arsenal*, 147-148.

⁵⁵ Hartley, "Defence Industrial Policy in a Military Alliance," 473-489.

⁵⁶ U.S. Joint Chiefs of Staff, *Capstone Concept for Joint Operations* (Washington, DC: U.S. Joint Chiefs of Staff, September 10, 2012), 6.