

NPS-AM-09-040



EXCERPT FROM THE PROCEEDINGS

OF THE
SIXTH ANNUAL ACQUISITION
RESEARCH SYMPOSIUM

**SUMMARY OF: NEW PATTERNS OF COLLABORATION
AND RIVALRY IN THE US AND EUROPEAN DEFENSE
AND AEROSPACE INDUSTRIES**

Published: 22 April 2009

by

Raymond (Chip) Franck, Ira Lewis and Bernard Udis

**6th Annual Acquisition Research Symposium
of the Naval Postgraduate School:**

**Volume II:
Defense Acquisition in Transition**

May 13-14, 2009

Approved for public release, distribution is unlimited.

Prepared for: Naval Postgraduate School, Monterey, California 93943



ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

The research presented at the symposium was supported by the Acquisition Chair of the Graduate School of Business & Public Policy at the Naval Postgraduate School.

To request Defense Acquisition Research or to become a research sponsor, please contact:

NPS Acquisition Research Program
Attn: James B. Greene, RADM, USN, (Ret)
Acquisition Chair
Graduate School of Business and Public Policy
Naval Postgraduate School
555 Dyer Road, Room 332
Monterey, CA 93943-5103
Tel: (831) 656-2092
Fax: (831) 656-2253
E-mail: jbgreene@nps.edu

Copies of the Acquisition Sponsored Research Reports may be printed from our website www.acquisitionresearch.org

Conference Website:
www.researchsymposium.org



ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

Proceedings of the Annual Acquisition Research Program

The following article is taken as an excerpt from the proceedings of the annual Acquisition Research Program. This annual event showcases the research projects funded through the Acquisition Research Program at the Graduate School of Business and Public Policy at the Naval Postgraduate School. Featuring keynote speakers, plenary panels, multiple panel sessions, a student research poster show and social events, the Annual Acquisition Research Symposium offers a candid environment where high-ranking Department of Defense (DoD) officials, industry officials, accomplished faculty and military students are encouraged to collaborate on finding applicable solutions to the challenges facing acquisition policies and processes within the DoD today. By jointly and publicly questioning the norms of industry and academia, the resulting research benefits from myriad perspectives and collaborations which can identify better solutions and practices in acquisition, contract, financial, logistics and program management.

For further information regarding the Acquisition Research Program, electronic copies of additional research, or to learn more about becoming a sponsor, please visit our program website at:

www.acquisitionresearch.org

For further information on or to register for the next Acquisition Research Symposium during the third week of May, please visit our conference website at:

www.researchsymposium.org



THIS PAGE INTENTIONALLY LEFT BLANK



Summary of: New Patterns of Collaboration and Rivalry in the US and European Defense and Aerospace Industries

Presenter: Raymond (Chip) Franck, PhD, Senior Lecturer, Graduate School of Business & Public Policy, Naval Postgraduate School, retired from the Air Force in 2000 in the grade of Brigadier General after 33 years commissioned service. He served in a number of operational tours as a bomber pilot; staff positions, including the Office of Secretary of Defense and Headquarters, Strategic Air Command; and was Professor and Head, Department of Economics and Geography at the US Air Force Academy. His institutional responsibilities at NPS have included the interim chairmanship of the newly formed Systems Engineering Department from July 2002 to September 2004, teaching a variety of economics courses, and serving on a number of committees to revise curricula for both the Management and Systems Engineering disciplines. His research agenda has focused on defense acquisition practices and military innovation.

Raymond (Chip) Franck
Senior Lecturer
Graduate School of Business & Public Policy
Naval Postgraduate School
Monterey, CA 93943
Phone: 831-656-3614
E-mail: refranck@nps.edu

Authors:

Ira Lewis, PhD, is Associate Professor of Logistics, Graduate School of Business and Public Policy, Naval Postgraduate School, Monterey, CA. His interests include transportation, public policy, and the impact of information technology on logistics.

Ira A. Lewis
Associate Professor
Graduate School of Business & Public Policy
Naval Postgraduate School
Monterey, CA 93943
Phone: 831-656-2464
E-mail: ialewis@nps.edu

Bernard Udis, PhD, is Professor Emeritus of Economics at the University of Colorado at Boulder and Visiting Research Professor at the US Naval Postgraduate School. He has also served as Distinguished Visiting Professor of Economics at the US Air Force Academy and as William C. Foster Fellow at the US Arms Control & Disarmament Agency. His NATO Research Fellowship examined the costs and benefits of offsets in defense trade.

Professor Udis' published work includes three books: *The Economic Consequences of Reduced Military Spending* (editor, 1973), *From Guns to Butter: Technology Organizations and Reduced Military Spending in Western Europe* (1978), and *The Challenge to European Industrial Policy: Impacts of Redirected Military Spending* (1987). In addition, he has published numerous articles in scholarly journals on defense industries and military power. These include "Offsets as Industrial Policy: Lessons from Aerospace" (with Keith Maskus, 1992), and "New Challenges to Arms Export Control: Whither Wassenaar?" (with Ron Smith, 2001). A number of his works are considered classics in defense economics and have been reprinted in collections such as *The Economics of Defence* (2001) and *ARMS TRADE, SECURITY AND CONFLICT* (2003).

Professor Udis' current research focuses upon competition and cooperation in the aerospace industries of the US and the EU.



Bernard Udis
Professor Emeritus
Graduate School of Business and Public Policy
13 Camino Real
Sandia Park, NM 87047
(505)286-2789
E-mail: Bernard.Udis@colorado.edu

This is a summary of the report cited above for inclusion in the *Proceedings* of the Sixth Annual Acquisition Research Symposium hosted by NPS (May 2009). The report itself greatly exceeds the length guidelines for the *Proceedings*. The topics raised here are discussed in greater detail within the body of that report.

Summary

International defense industrial affairs are becoming increasingly global and increasingly complex. This report is a continuation of the authors' efforts to provide insights and analytical frameworks useful for understanding ongoing developments in the global defense market.¹

In this stage of that overall project, we focus primarily on defense industrial firms and their relationships with their sovereign customers—considering the organization of Boeing 787 development and production, the KC-45 aerial tanker competition, and European defense firms' direct investment in the US defense market.

Our Cases

In the 787 case (Section II), we observe that even experienced companies like Boeing can run afoul of the complexities of coordinating a multinational, multiform venture. We suspect this problem is not unique to Boeing, and will, if not satisfactorily addressed, limit the scope and success of multinational projects in the defense sector as well.

The KC-45 (Section III), at least to date, seems to illustrate a new weakness of defense establishments relative to their suppliers. The failure to successfully award a KC-45 contract to the EADS-Northrop Grumman team (after protest to the GAO) raises some troubling questions. Is it possible to award a protest-proof contract for a major defense system? Doesn't the buyer side of the US defense market more resemble a quarrelsome committee than the classic model of the sovereign monopsonist? With increasingly large, winner-take-all competitions, what's the potential for procurement gridlock—the apparent state of the KC-45? Will the concentration of buyer power (through smaller numbers) and the resultant increase in agility give suppliers exploitable advantages over their customers?

Our discussion of foreign direct investment in US defense industries focuses on three European firms: BAE, EADS and Finmeccanica (Section IV). Our research was informed in significant part through confidential interviews with high-level, Washington-based officials

¹ Previous work by the authors includes *Echoes across the Pond* (NPS-AM-08-002). Monterey, CA: NPS, 2008.



intimately familiar with the issues at hand. The central theme of this discussion is the interplay between the motivations for these firms to enter the US defense market, the US regulatory environment (which constrains such entries), and the corporate strategies intended to work with (and around) those legal barriers.

Our discussion of these three firms suggests three interesting conclusions. First, entry into the US defense market is indeed motivated primarily by the relatively high level of the US defense budget, relative to those in Europe (consistent with prevailing conventional wisdom). Second, “Buy American” and restrictions on direct investment have proven to be penetrable—to a significant degree. Finally, a two-way street of defense industrial trade between the US and Europe appears to be emerging as fully fledged reality—after decades of heated debate and limited progress.

Conclusions

Our conclusions follow. Many are not striking (or new to us), but taken together, we feel they are significant and useful.

Complexity and cost have changed and are fundamentally changing the nature of economies of scale. Production runs that usefully exploit economies of scale and learning curves are increasingly beyond the reach of single nation-states. Accordingly, new weapon systems (such as the Joint Strike Fighter) have increasingly become international ventures—albeit with senior partners. On the supply side, defense firms have undertaken more projects featuring outsourcing arrangements and strategic partnerships. In addition, the number of first-tier defense suppliers has significantly declined.

Inter-firm relationships are much more a product of situation and project type than by the firm boundaries of more traditional thought. Even very large firms (such as Boeing and Lockheed-Martin) can compete in some areas and collaborate in others. This has contributed to the increased complexity of both the market structure and the management of major projects.

Finally, the combination of reduced numbers of suppliers and the complexity of globalized defense markets has significantly increased the market power of defense industrial suppliers relative to their (sovereign) customers. Among other things, it appears that the suppliers have been more agile in adapting to complexity than have their bureaucratic customers.



THIS PAGE INTENTIONALLY LEFT BLANK



2003 - 2009 Sponsored Research Topics

Acquisition Management

- Acquiring Combat Capability via Public-Private Partnerships (PPPs)
- BCA: Contractor vs. Organic Growth
- Defense Industry Consolidation
- EU-US Defense Industrial Relationships
- Knowledge Value Added (KVA) + Real Options (RO) Applied to Shipyard Planning Processes
- Managing Services Supply Chain
- MOSA Contracting Implications
- Portfolio Optimization via KVA + RO
- Private Military Sector
- Software Requirements for OA
- Spiral Development
- Strategy for Defense Acquisition Research
- The Software, Hardware Asset Reuse Enterprise (SHARE) repository

Contract Management

- Commodity Sourcing Strategies
- Contracting Government Procurement Functions
- Contractors in 21st Century Combat Zone
- Joint Contingency Contracting
- Model for Optimizing Contingency Contracting Planning and Execution
- Navy Contract Writing Guide
- Past Performance in Source Selection
- Strategic Contingency Contracting
- Transforming DoD Contract Closeout
- USAF Energy Savings Performance Contracts
- USAF IT Commodity Council
- USMC Contingency Contracting

Financial Management

- Acquisitions via leasing: MPS case
- Budget Scoring
- Budgeting for Capabilities-based Planning
- Capital Budgeting for DoD



- Energy Saving Contracts/DoD Mobile Assets
- Financing DoD Budget via PPPs
- Lessons from Private Sector Capital Budgeting for DoD Acquisition Budgeting Reform
- PPPs and Government Financing
- ROI of Information Warfare Systems
- Special Termination Liability in MDAPs
- Strategic Sourcing
- Transaction Cost Economics (TCE) to Improve Cost Estimates

Human Resources

- Indefinite Reenlistment
- Individual Augmentation
- Learning Management Systems
- Moral Conduct Waivers and First-tem Attrition
- Retention
- The Navy's Selective Reenlistment Bonus (SRB) Management System
- Tuition Assistance

Logistics Management

- Analysis of LAV Depot Maintenance
- Army LOG MOD
- ASDS Product Support Analysis
- Cold-chain Logistics
- Contractors Supporting Military Operations
- Diffusion/Variability on Vendor Performance Evaluation
- Evolutionary Acquisition
- Lean Six Sigma to Reduce Costs and Improve Readiness
- Naval Aviation Maintenance and Process Improvement (2)
- Optimizing CIWS Lifecycle Support (LCS)
- Outsourcing the Pearl Harbor MK-48 Intermediate Maintenance Activity
- Pallet Management System
- PBL (4)
- Privatization-NOSL/NAWCI
- RFID (6)
- Risk Analysis for Performance-based Logistics
- R-TOC Aegis Microwave Power Tubes



- Sense-and-Respond Logistics Network
- Strategic Sourcing

Program Management

- Building Collaborative Capacity
- Business Process Reengineering (BPR) for LCS Mission Module Acquisition
- Collaborative IT Tools Leveraging Competence
- Contractor vs. Organic Support
- Knowledge, Responsibilities and Decision Rights in MDAPs
- KVA Applied to Aegis and SSDS
- Managing the Service Supply Chain
- Measuring Uncertainty in Earned Value
- Organizational Modeling and Simulation
- Public-Private Partnership
- Terminating Your Own Program
- Utilizing Collaborative and Three-dimensional Imaging Technology

A complete listing and electronic copies of published research are available on our website:
www.acquisitionresearch.org



THIS PAGE INTENTIONALLY LEFT BLANK





ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL
555 DYER ROAD, INGERSOLL HALL
MONTEREY, CALIFORNIA 93943

www.acquisitionresearch.org