

Procurement Competition at Work: The Navy's Experience

Everett Pyatt†

I found many of the assertions and conclusions contained in William B. Burnett and William E. Kovacic's article, *The Reform of United States Weapons Acquisition Policy: Competition, Teaming Agreements, and Dual-Sourcing*¹ to be valid, despite the fact that much of the authors' commentary expresses concern about the Navy's use of competition and dual-sourcing. Although recent scrutiny of the defense acquisition process has created a furor among those unfamiliar with the process,² Burnett and Kovacic have presented a generally accurate picture of the acquisition process and the recent changes that it has undergone.

This Comment analyzes several specific areas discussed by Burnett and Kovacic. Part I explains why Congress should resist implementing new laws and regulations. Part II reviews the role of competition and how it has improved defense procurement by lowering costs and improving quality through dual-sourcing. It then responds to some criticisms of dual-sourcing that Burnett and Kovacic advance. Part III discusses the professionalism of the acquisition workforce. This Comment concludes with an examination of the alternative strategies discussed by Burnett and Kovacic.

I. Resisting New Laws and Regulations

As Burnett and Kovacic assert, Congress and the Department of Defense (DOD) should resist the impulse to add new laws and regulations.³ There are already over four thousand individual

† Assistant Secretary of the Navy (Shipbuilding and Logistics). The author is the Senior Procurement Executive of the Navy and has participated in creating many of the new procurement approaches discussed in this and the accompanying article and comments. Much of the information presented is derived from first-hand experience. The following members of the United States Navy Supply Corps made significant contributions to this Comment: Rear Admiral William H. Hauenstein, Captain Phillip H. Harrington, Captain Barry L. Cohen, and Lieutenant Commander Richard D. Dowling.

1. Burnett & Kovacic, *Reform of United States Weapons Acquisition Policy: Competition, Teaming Agreements, and Dual-Sourcing*, 6 YALE J. ON REG. 249 (1989).

2. See *id.* at 249-51.

3. *Id.* at 313.

statutory provisions that affect the procurement process.⁴ For fiscal year 1989 alone, the National Defense Authorization Act,⁵ the DOD Appropriations Act,⁶ and the Office of Federal Procurement Policy (OFPP) Act Amendments⁷ contained forty-three new procurement policy and reform provisions.⁸ Implementation of new laws is widely believed to have caused an increase in the number of protests filed with the General Accounting Office during the past several years.

Notwithstanding the Navy's most stringent efforts, procurement administrative lead time⁹ has grown during this period from 84 to 132 days.¹⁰ This increased lead time unnecessarily delays the delivery of urgently needed systems and their associated logistic support to the fleet. Current regulations necessitated by the new laws are responsible for most of the delay,¹¹ and new legislation would be only counterproductive. Although there is no question that the acquisition system can be, and is being, improved, the answer to each new procurement horror story is not additional legislation. Those involved in the procurement process need time to absorb and to evaluate recent legislation before embarking on new initiatives.¹²

II. Competition

The Competition in Contracting Act (CICA) of 1984¹³ is unique among Congress's recent laws concerning the procurement

4. U.S. OFFICE OF MANAGEMENT & BUDGET, MANAGEMENT OF THE UNITED STATES GOVERNMENT 88 (1989).

5. Pub. L. No. 100-456, 1988 U.S. CODE CONG. & ADMIN. NEWS (102 Stat.) 2007.

6. Pub. L. No. 100-463, 1988 U.S. CODE CONG. & ADMIN. NEWS (102 Stat.) 2270.

7. Pub. L. No. 100-679, 1988 U.S. CODE CONG. & ADMIN. NEWS (102 Stat.) 4055.

8. Office of the Assistant Secretary of Defense, Production & Logistics, Selected Procurement Policy Reform Provisions (1989) (on file with author).

9. Procurement administrative lead time is the time from when a procurement request is received to when a contract is awarded.

10. Office of the Naval Supply Systems Command, Data on Administrative Lead Time (1989) (on file with author).

11. Originally, two statutes governed most of the procurement system: the Armed Services Procurement Act of 1947, Pub. L. No. 80-413, 62 Stat. 21 (1948) (codified as amended at 10 U.S.C. § 2301 (1982 & Supp. V 1987)), and the Federal Property and Administrative Services Act of 1949, Pub. L. No. 81-152, 63 Stat. 377 (codified as amended at 41 U.S.C. §§ 251-260 (1982 & Supp. V 1987)).

12. See generally U.S. DEP'T OF DEFENSE, REPORT TO CONGRESS ON SIMPLIFICATION AND STREAMLINING OF ACQUISITION PROCEDURES 7-8 (1988).

13. Pub. L. No. 98-369, 1986 U.S. CODE CONG. & ADMIN. NEWS (98 Stat.) 1175 (codified as amended in scattered sections of 10, 31 & 41 U.S.C.).

process. It has simplified the procurement process by strengthening the statutory basis for competition. Burnett and Kovacic wisely recommend that the government should now "should attempt to refine rivalry-based techniques for purchasing weapon systems and should reduce existing regulatory requirements."¹⁴ The Navy has taken the lead in reducing these regulatory requirements.

For example, the Navy recently stopped requiring cost and pricing data in dual-sourced programs when adequate price competition exists.¹⁵ The benefits of this policy change have been demonstrated through both reduced lead times and lower costs of weapon systems. In 1987, the production contract for the Trident submarine was open to competitive bidding for the first time. Spared the need for costly and time-consuming audits, the Navy completed evaluation and award of the contract in only one month after receiving the proposals. In addition to these significant time and labor savings, the government achieved a cost savings of over \$74 million on three vessels.¹⁶

In a competitive acquisition, data submissions and audits simply add to the overall cost and lead time of the acquisition without providing a corresponding benefit.¹⁷ Competition, not administrative paperwork or more audits, has provided the most effective discipline.

A. *Cutting Costs Through Competition*

Regulatory measures do little to increase corporate motivation to control costs.¹⁸ In fact, because negotiated profits under a regulatory framework are based on costs, management has little incen-

14. Burnett & Kovacic, *supra* note 1, at 256.

15. 48 C.F.R. §§ 5215.804-3 (b)(3)(iii), 5252.215-9000(a) (1988) (concerning use of cost or pricing data and cost evaluation when adequate price competition exists).

16. FISCAL YEAR 1988 OFF. OF THE COMPETITION ADVOCATE GEN. OF THE NAVY, REPORT TO CONGRESS II-2 (Dec. 1988) [hereinafter NAVY REPORT TO CONGRESS].

17. The government pays a high price for the contractor to prepare data to support its price, especially if the data must be certified. The government must also pay for an audit. Both of these reviews require expenditures of time as well as money. These can be reduced if the contracting officer is able to use competition to help contain the contractor's price.

18. For example, 10 U.S.C. § 2304 (1982) requires a prime contractor, or any subcontractor, to submit cost or pricing data under certain circumstances, and to certify that, to the best of its knowledge and belief, the cost or pricing data submitted is accurate, current, and complete. We have found these requirements to be burdensome and onerous, and they should be employed only when necessary.

tive to control costs. Moreover, rework of rejected material¹⁹ under a regulatory system has been of little concern because it tends to increase costs and thus increases the baseline from which profits are calculated.²⁰

Competition-based contracts have dramatically changed this environment.²¹ Instead of looking for ways to maintain prices, contractors now must focus their attention on reducing prices, improving quality, and producing efficiently to maximize profit.²² Figure 1²³ relates the reduction of prices for the Tomahawk cruise missile program to the introduction of competition for producing it. It shows that competition not only has increased the slope of the manufacturers' cost improvement curve, but also has displaced the curve.²⁴ Prior to the introduction of competition, a ninety percent cost improvement curve was expected. After competition between General Dynamics and McDonnell Douglas, the first and second competitive awards continued to follow a ninety percent curve even though fixed costs at the two facilities were being absorbed by the manufacturers. The third competitive award showed more than a twenty percent displacement from historical experience. In addition, awards over the following two years showed an increase in the slope of the cost improvement curve.

19. Rework costs are those costs incurred and absorbed by the contractor due to faulty work that has been inspected and rejected by the government. Quality control experts have shown how rework and scrap losses due to process problems actually drive up the cost of poor quality products. See, e.g., W. DEMING, *OUT OF THE CRISIS* (1986).

20. Recent changes in the profit policy that were sponsored by the Navy have changed this incentive by rewarding capital investment rather than cost increases. See U.S. DEPT OF DEFENSE, *DEFENSE ACQUISITION CIRCULAR 15.902* (1987).

21. The requirement to provide extensive cost or pricing data is waived when the negotiated contract price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, prices set by law or regulation, or, in exceptional cases, when the head of the agency determines that the requirements may be waived and states in writing the reasons for such determination. See 10 U.S.C. § 2306(f)(2) (1982). One of the advantages of using competition to determine prices is that it allows the market to set prices rather than resorting to the collection and detailed analysis of contractor-generated cost data.

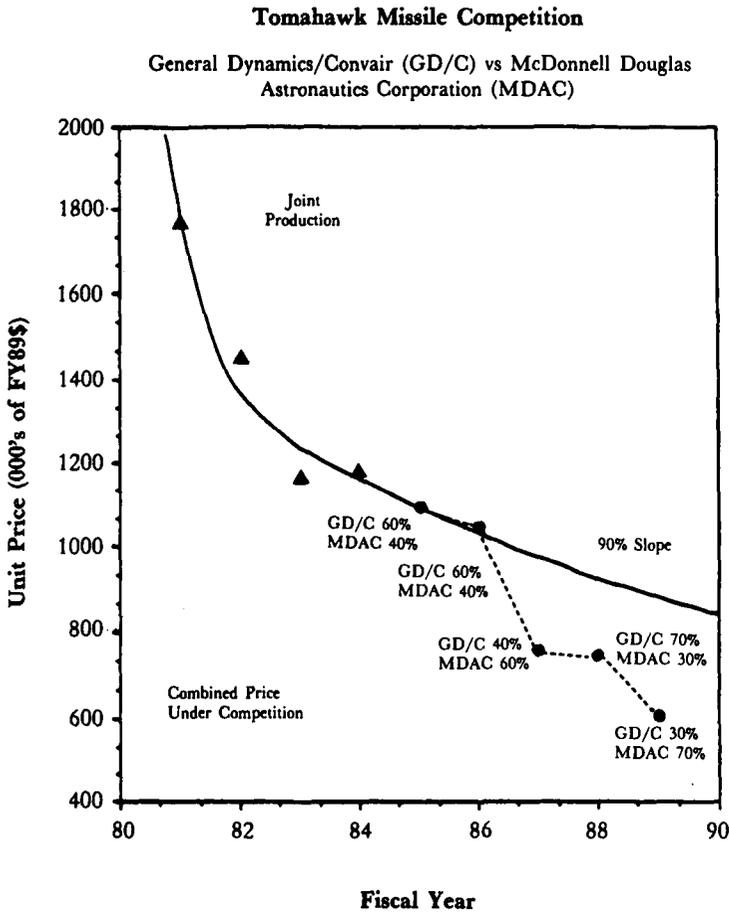
22. In addition to private-private competitive benefits, the Navy has experienced similar benefits from competition between private and public sector facilities as well.

23. Naval Center for Cost Analysis, *Analysis of Competitive Procurement of Selected Navy Weapon Systems*, Tab 4 (Jan. 3, 1988) (unpublished government study) (on file with author) [hereinafter *Analysis of Procurement*].

24. A cost improvement curve is obtained by plotting all costs associated with production against the units produced. Slope is determined by taking the dollar amount of savings obtained each time the quantity produced doubles, and subtracting this amount from the previous cost. For example, an 80% cost improvement curve results when the savings between the 20th and the 40th item are 20%. The term "displacement" means a drop in the curve completely independent from expected cost improvement.

As a result of these changes, the Navy expects a cumulative savings of \$500 million over the life of the Tomahawk missile program.²⁵

Figure 1



25. See Analysis of Procurement, *supra* note 23, at Tab 4.

Burnett and Kovacic express concern that contractors may opt to bid a losing strategy.²⁶ This fear has proven unfounded in practice. It appears that contractors' desire to win a substantial portion of a weapons production award is greater than any tendency to exploit the competitive structure with a bid-to-lose approach. While the potential for gaming can never be eliminated, the procurement structure should be designed to avoid it whenever possible. The possibility of an all-or-nothing split in the award of dual-sourced contracts can discourage any losing strategy. Furthermore, if the Navy suspects that one offeror is using a loser strategy, it can refuse to award that portion of the contract to the offeror unless the price is determined to be fair and reasonable. This may require negotiating with the loser as if on a sole-source basis (with all its pitfalls) to bring the price into line. However, the existence of another source strengthens the government's hand in comparison to that which it holds in a true sole-source negotiation.

Cost reductions similar to those experienced in the Tomahawk program have occurred in every other program that the Navy has dual-sourced, whether those programs involve high rates of production, as with missiles, or low rates of production, as with the cruiser program.²⁷ Head-to-head competitions were conducted for the purchases of the AEGIS Cruiser during the period from 1984 to 1988. We estimate that gross savings from competition will exceed \$1.8 billion—more than enough to cover the cost of establishing the second source and any additional administrative costs. Even in a low-quantity program such as shipbuilding, dual-sourcing provides cost reductions that are not available under sole-sourcing. Contrary to the authors' assertions,²⁸ there is no reason to believe that similar savings will not result from the competition for the Advanced Tactical Aircraft (ATA) or the V-22 Tilt-rotor (Osprey) aircraft. Competition causes contractors to cut costs through more efficient production methods to improve

26. See Burnett & Kovacic, *supra* note 1, at 287-89. A losing strategy is one where a contractor is willing to lose in a dual-source competition when guaranteed the loser's percentage of the production total. For example, the contractor might decide that it is better to bid a higher price, and thereby receive a "loser's" 30% share of the production total, rather than bid a lower price for the 70% share of production.

27. See, e.g., Analysis of Procurement, *supra* note 23 (providing examples of cost savings achieved through dual-sourcing). Cf. NAVY REPORT TO CONGRESS, *supra* note 16, at II-3, II-7 (providing examples of savings achieved through more widely used "full and open" competitive procedures).

28. Burnett & Kovacic, *supra* note 1, at 292-93.

quality. This results in savings regardless of the weapon system's complexity or production quantities. Table 1²⁹ shows the savings achieved through competitive production of various military hardware.

Table 1

Savings from Competition Involving Major Weapons Systems

Weapon System	Annual Production Rate	Sole-Source Cost (\$M)	Second Source Start-up Cost (\$M)	Dual-Source Savings (\$M)
Standard Missile	1,500	\$2,270	\$110.0	\$420
Standard Missile Motor	1,500	710	2.5	170
Tomahawk	400	3,720	88.0	550
Cruisers	5	9,800	110.0	1,810
Landing Ships	2	1,390	5.2	390
Oilers	2	1,870	47.0	140
Air Cushion Landing Craft	12	1,820	*	90
Missile Launchers	12	1,830	9.3	290

* Start-up costs not separately identified

B. Improving Quality Through Competition

Competition has also improved product quality. For example, rejection rates for "all-up-round"³⁰ production of the Tomahawk

29. See generally *Analysis of Procurement*, *supra* note 23.

30. "All-up-round" missiles are purchased by the Navy from an integrator who takes responsibility for the components as well as final assembly of the missile.

cruise missile have declined steadily since the introduction of a second source. Another indication of improved quality is the decrease in rework costs in ship repair. These two examples, which are typical of the Navy's experience with competition, show that competition forces contractors to improve their quality and to reduce rework costs by doing the job correctly the first time.³¹

An additional benefit of competition has been to avoid the contraction of our national production base that would have occurred without dual-sourcing. Spreading production among several companies helps to ensure a solid industrial base for future peacetime development, as well as a production base for weapons should a mobilization effort become necessary. Although this contribution to the national defense posture cannot be quantified, it is obviously significant.

C. *Response to Criticism of Dual-Sourcing*

Burnett and Kovacic discuss what are perceived to be shortcomings of dual-sourcing. They claim that dual-sourcing requires increased capital expenditures that exceed the benefits of competition.³² Costs of technology transfer, tooling, and administrative support, however, are usually small compared to total program life cycle costs, even for programs of short duration. These costs represent approximately three percent of the total funds in any program.³³ Tooling is the largest portion of this cost, but my experience has been that tooling of a second source is usually only half as expensive as tooling of the original source.

Burnett and Kovacic contend that overall costs of contract administration increase with the addition of another contractor.³⁴ This is not true. Savings attributable to reduced sole-source haggling are almost equal to increases required by the coordination of two sources.

The authors' concern that companies will cut research and development efforts to avoid transferring technical expertise to

31. Vice Admiral G. Davis, Jr., Remarks at the Third Annual Navy Competition Advocate Symposium 11 (Nov. 4, 1987) (on file with author).

32. Burnett & Kovacic, *supra* note 1, at 287.

33. This 3% is an average of eight dual-source programs with various years of production remaining. It is derived by dividing the cost for starting a second source by the value of the program remaining under a sole-source procurement. Annual production rate is the number of units of a weapon system produced per year.

34. Burnett & Kovacic, *supra* note 1, at 287.

their competitors³⁵ is also unfounded. Because technological advances can result in savings, companies have not shown a willingness to give up their technological capabilities. Moreover, competition in the early phases of a program is focused more on technical issues than on price. Failure to maintain a technical edge could cause a supplier to lose the ability to participate in the program. I have not seen any evidence to support the concern raised by the authors.

I do not agree with Burnett and Kovacic's conclusion that teaming should be discouraged in future dual-source programs.³⁶ Teaming to improve the ability of an offeror to participate in a major acquisition is not a new concept. Although it has not been tested as much as other forms of dual-sourcing, it can bring true competition into a program at its inception and maintain it throughout production.

Burnett and Kovacic decry the teaming experience of Northrop and McDonnell Douglas on the F/A-18.³⁷ The basic issue in that dispute concerned the companies' respective market shares of non-Navy sales; it did not concern a relationship with the Navy. Although this was a very real problem for these companies, it is always dangerous to generalize from a specific instance as the authors have done. Presumably, the lessons learned will not be lost on these companies or the rest of the defense industry. Until we have more experience with teaming and the defense industry's adjustment to it, it is premature to seek advice from the Federal Trade Commission or the Department of Justice, as suggested by the authors.³⁸

Burnett and Kovacic correctly point out that fewer new weapons programs are likely to be started in the future.³⁹ This is due to the need to meet the defense objectives of the country in the most cost-effective manner. We can no longer afford the luxury of developing weapon systems to meet a narrow range of threats. Instead, we must develop the capability for a flexible response through a single system. The delivery platform, whether it is a DDG-51 class destroyer, ATA, ATF, B-2, or LHX must be designed within these parameters. It is only through teaming that

35. *Id.* at 286-87.

36. *Id.* at 279-81.

37. *Id.* at 276-78.

38. *Id.* at 307-10.

39. *Id.* at 273.

the defense industry realistically can develop the increasingly flexible weapon systems that the armed forces require.

III. The Professionalism of the Weapons Acquisition Workforce

Burnett and Kovacic correctly identify the training and competency of the workforce as keys to the successful implementation of competition. However, their blanket assertion that contractor employees are "better trained, better paid, more experienced and more highly motivated than their government counterparts,"⁴⁰ grossly oversimplifies the different roles that government and contractor employees play in military procurement. The armed forces are hampered in ways that private industry is not burdened. First, labyrinthine laws and regulations govern DOD acquisitions. Second, full and open competition is the law. Third, minority business goals and small business set-asides are routine in many areas. Fourth, preference for products made in the United States and concerns over the balance of payments influence source selection. Finally, annual appropriations prevent long-term commitments. Although these requirements serve valuable purposes, they create an environment for the public sector buyer that is markedly different from that of the private employee.

Because well-trained professionals add tremendously to the chances for conducting successful acquisition, DOD has long required a wide array of training to maintain its standards.⁴¹ Recently, DOD raised the standards for its entry level acquisition personnel by requiring a minimum standard of business-related, college-level courses for those interested in a career in military contracting.⁴² In addition, the Navy has experimented with special programs to improve the contracting specialists' professional status.⁴³ Developing these and additional programs should ensure that the government has the best trained, most experienced, and most professional career contracting work force possible.

40. *Id.* at 306.

41. U.S. DEP'T OF DEFENSE, DOD CIVILIAN CAREER PROGRAM FOR CONTRACTING AND ACQUISITION PERSONNEL (Dec. 1982) (DOD 1430.10-M-1) (on file with author).

42. U.S. OFFICE OF PERSONNEL MANAGEMENT, MEMORANDUM FOR DIRECTORS OF PERSONNEL, QUALIFICATION STANDARD FOR TWO-GRADE INTERVAL ADMINISTRATIVE, MANAGEMENT, AND SPECIALIST POSITIONS (Aug. 10, 1988) (on file with author).

43. *See, e.g.*, PRESIDENT'S BLUE RIBBON COMMISSION ON DEFENSE MANAGEMENT, A QUEST FOR EXCELLENCE—FINAL REPORT TO THE PRESIDENT, Appendix J (1986) (describing alternative personnel program at China Lake, Cal.).

Notwithstanding higher salaries within the private sector, the Navy's acquisition team is composed of extremely dedicated, motivated, and capable personnel. Many of our employees turn to government service out of a desire to serve their country. Private industry's interest in hiring the Navy's acquisition personnel is itself evidence of the Navy's success in recruiting and training qualified employees. Although some valued employees are eventually lost to industry, employee turnover is expected in every business. It would cause far greater concern if none of the Navy's contracting personnel ever received an offer from the private sector. It is simply wrong to assume that the public sector loses its best and brightest to industry; we retain our appropriate share.

IV. Recommendations

Although Burnett and Kovacic support dual-sourcing and agree that the regulatory process has failed to produce adequate results, the authors recommend several alternatives to dual-sourced production. Some are valuable and could make significant contributions to the Navy's goals of low-cost, high-quality military hardware, but some are not as useful as the authors suggest.

First, funding research and development capability directly⁴⁴ does little, if anything, to provide a competitive production base. The current system of setting ceilings on independent research and development is not perfect, but it does attempt to match research with need, something that the authors' suggested improvement does not do. Therefore, the current system of monitoring independent research and development should be retained.

Second, upgrading existing systems⁴⁵ is a sound concept that the Navy actively pursues. For example, the USS Coral Sea and USS Midway are World War II vintage aircraft carriers that continue to serve as deploying carriers. Through prudent upgrades of their entire range of capabilities, these carriers continue to be effective platforms from which the Navy can launch its most modern aircraft. Likewise, the Sidewinder missile, which was developed in the 1950s, continues to be an effective weapon due to a continuing series of improvements. The A-6 and F-14 also have been upgraded to extend their useful lives and give them the

44. Burnett & Kovacic, *supra* note 1, at 299-300.

45. *Id.* at 297.

capability to meet current threats. However, as is true with most weapon systems regardless of how they were developed, there will come a time when the threat will outpace the upgrade and demand an ATA, B-2, or SSN-21.

Third, employing close substitutes⁴⁶ can sometimes enhance competition, but such instances are rare. This is especially true for major weapon systems. The case of the F/A-18 and F-14/A-6 tradeoff cited by the authors is unique.⁴⁷ Normally, weapon systems do not have sufficient overlap in mission capability to allow one to be substituted for another. The Navy continues to look for opportunities to substitute, but can rarely find them, even across service lines. An F-16 cannot land on an aircraft carrier and still be an F-16.

The Navy has had considerable success, however, in using near substitutes outside the major weapon systems arena. By specifying minimum salient characteristics, the Navy has found new vendors using brand name or equal solicitations. The increased emphasis on nondevelopmental items allows movement away from militarized specification to commercial equivalents. In this area of acquisition, Burnett and Kovacic's advocacy of substitutes meshes with Navy practice being used on a daily basis throughout the procurement system.

Fourth, increased recourse to foreign suppliers⁴⁸ is an option when foreign suppliers can meet the Navy's needs. One example is the MHC-51 Coastal Minehunter. This acquisition represents a leap in technology from a wooden hull to a fiberglass hull that had its origin in the Italian Lerici design. Another foreign item is the Penguin missile from Norway, which eliminated the need to develop a U.S. look-alike missile. Similarly, the Kfir aircraft from Israel fulfills a particular need in the Navy's pilot training program. These three examples are typical of the Navy's efforts to look worldwide to satisfy its military needs.

Finally, greater use of government research and development⁴⁹ seems inappropriate in a discussion of production competition. There is no need to increase government research and development beyond current levels of funding. The private sector has the brainpower, resources, and incentives to accomplish most research

46. *Id.* at 297-98.

47. *Id.*

48. *Id.* at 298-99.

49. *Id.* at 299-300.

and development needs. The Navy already pays for a significant share of military related research through Independent Research & Development⁵⁰ agreements with defense contractors and contracts with various universities such as the Applied Physics Lab at Johns Hopkins University. These university contracts ensure that developments in academia are brought to our attention for further exploration.

Conclusion

The Navy's experience shows that efficiency is promoted through competition rather than through extensive regulations. The current legal framework is more than sufficient to achieve this competitive streamlining, and additional regulation may prove more harmful than beneficial. Our experiences with dual-sourcing show a tremendous return on investment; payback typically occurs less than two years after the inception of head-to-head competition. No other process has as great a potential to control costs, to improve product quality, and to assure a production base. All the armed services must continue to consolidate the experiences of competition, to refine the competitive procurement process, and to continue to expand it to sectors beyond the major weapon systems arena.

50. *See, e.g.*, 48 C.F.R. § 31.205-19 (1987).

