Trends in Performance-Based Services Acquisition

By

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Table of Contents

Abstract

Performance-based services acquisition (PBSA) is a proven strategy that reduces costs and improves the quality of service. Rather than specify inputs or service requirements, the Department of Defense (DoD) stipulates a level of performance that the contractor is then obligated to meet, or exceed. When used appropriately, this strategy aligns the objective of the contractor with that of the government customer, and can increase the effectiveness and efficiency of the services provided.

Recognizing the benefits, the DoD has sought to increase the appropriate use of PBSA. In 2000, the Under Secretary of Defense for Acquisition and Technology directed that 50 percent of service acquisitions be performance-based (measured in dollars and actions) by the year 2005 (Gansler, 2000). Based on data from the Federal Procurement Data System (FPDS), this report presents trends in PBSA over the last 15 years.

I. Introduction

The Department of Defense (DoD) relies on the private sector to provide a wide range of services (these can include consulting and administrative support, information technology services, product maintenance services, and base operations support) to accomplish functions needed to deliver important defense capabilities. For example, in FY 2014, the DoD obligated $145 billion on contracted services; this accounted for more than half of the DoD's total contract spending ($275 billion). Government-wide, the percentage of total contract dollars spent on service contracts has increased from 23% in 1985 to 63% in 2014 (Kelman, 2017). Because service contracting is such a significant component of government spending, several initiatives have been implemented over the years in an effort to improve the efficiency of service contracting.

Performance-based services acquisition (PBSA) is a proven strategy that can reduce costs and improve the quality of service. Rather than specify inputs or service requirements, the customer stipulates a level of performance that the contractor is then obligated to meet or exceed. The contractor has the freedom to meet the objective using its resources and personnel to improve processes and effectiveness. This strategy aims to align the objective and incentives of the contractor with those of the customer. When properly structured, these contracts incentivize providers to improve their efficiency.

In 2000, then-Under Secretary of Defense, Acquisition, Technology, and Logistics Jacques Gansler issued PBSA guidance: "It is the policy of the Department of Defense that, in order to maximize performance, innovation and competition, often at a savings, performance based strategies for the acquisition of services are to be used wherever possible" (Gansler, 2000). He went on to state that "In order to ensure that the DoD continually realizes these savings and performance gains, I establish, at a minimum, that 50% of service acquisitions, measured both in dollars and actions, are to be performance-based by the year 2005."

How have the DoD and its constituent organizations responded to this mandate? This report will examine trends in PBSA over the course of the fifteen years. Is current use (extent and implementation) of PBSA appropriate? How can use be improved?

To answer these questions, we analyzed data from the Federal Procurement Data System (FPDS). We disaggregated the data (by sector, agency, year, contract-type, etc.) to capture the trends and patterns related to PBSA. Then, in an effort to contextualize our findings, we present two case studies—the Navy Marine Corps Intranet and the Army's Stryker PBL—which highlight some of the challenges regarding PBSA and contract type. Based on our analysis, we present findings and recommendations aimed at improving PBSA implementation.

II. Background

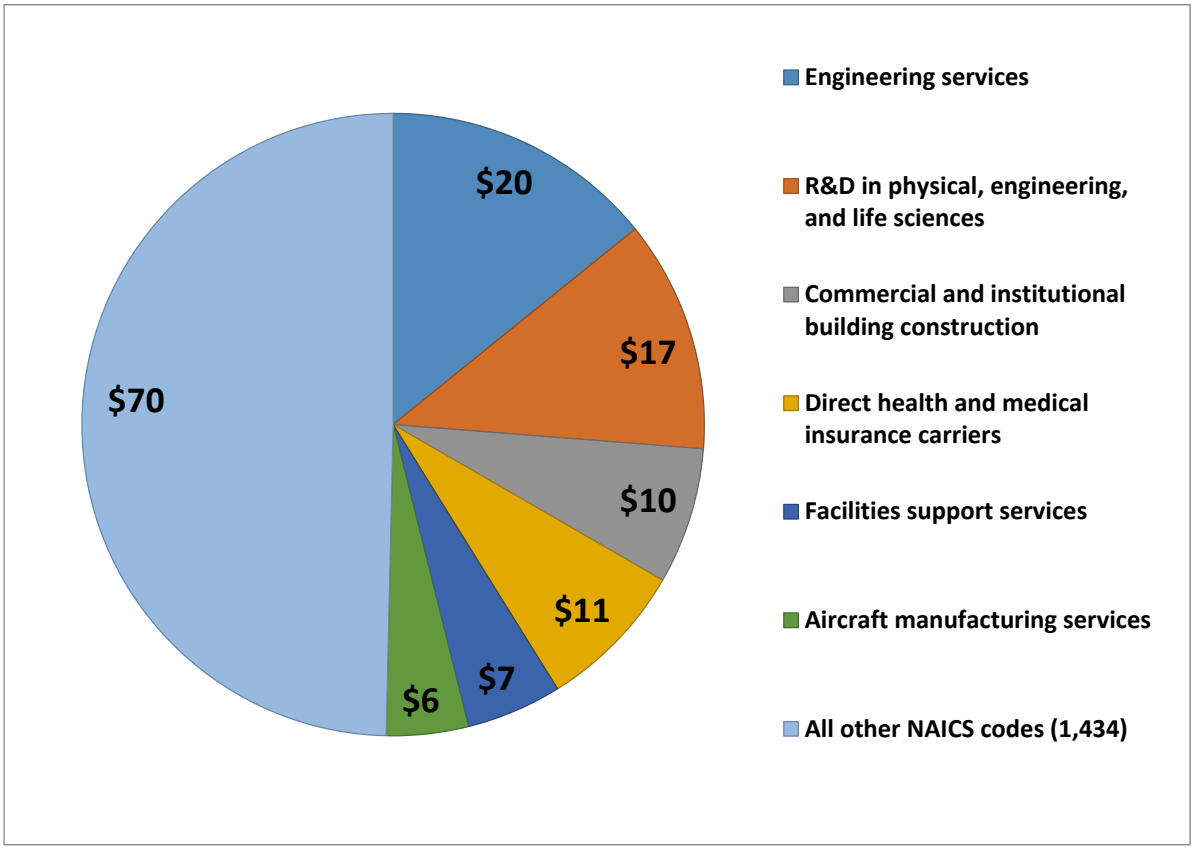

Figure 1. FY 2015 DoD service contracts spending by NAICS code (**action obligations in billions**; analysis of FPDS data)

The DoD contracts for a large variety of services, ranging from building maintenance to weapons design, healthcare, education, transportation, and food services. In fact, over half of federal acquisition dollars are spent by the DoD. The FAR (2010) defines a contract for services as an agreement "that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply" (DoD, 2009). Figure 1 shows the industries in which DoD services acquisition is concentrated.

Services vs. Supplies

In FY 2015, the DoD obligated $275 billion. Of this amount, $130 billion, or 47% was spent on non-service contracts (supplies); $145 billion (53%) was spent on services, a figure that includes contracted R&D (see Figure 2). In the 1980s, DoD spending on services contracts averaged only 39% (U.S. General Services Administration, 2009). Given the current and

projected magnitude of spending on contracted services, improving the efficiency of their acquisition is of utmost importance, especially given continued concern over the DoD's current acquisition policies. Critics point to growing numbers of "undefinitized contracts," large numbers of cost-based contracts, the lack of adequate metrics, a general lack of coordination with regard to the procurement of services, and a lack of confidence that the DoD is optimizing the value received from these contracts (House of Representatives Committee on Armed Services, 2009).

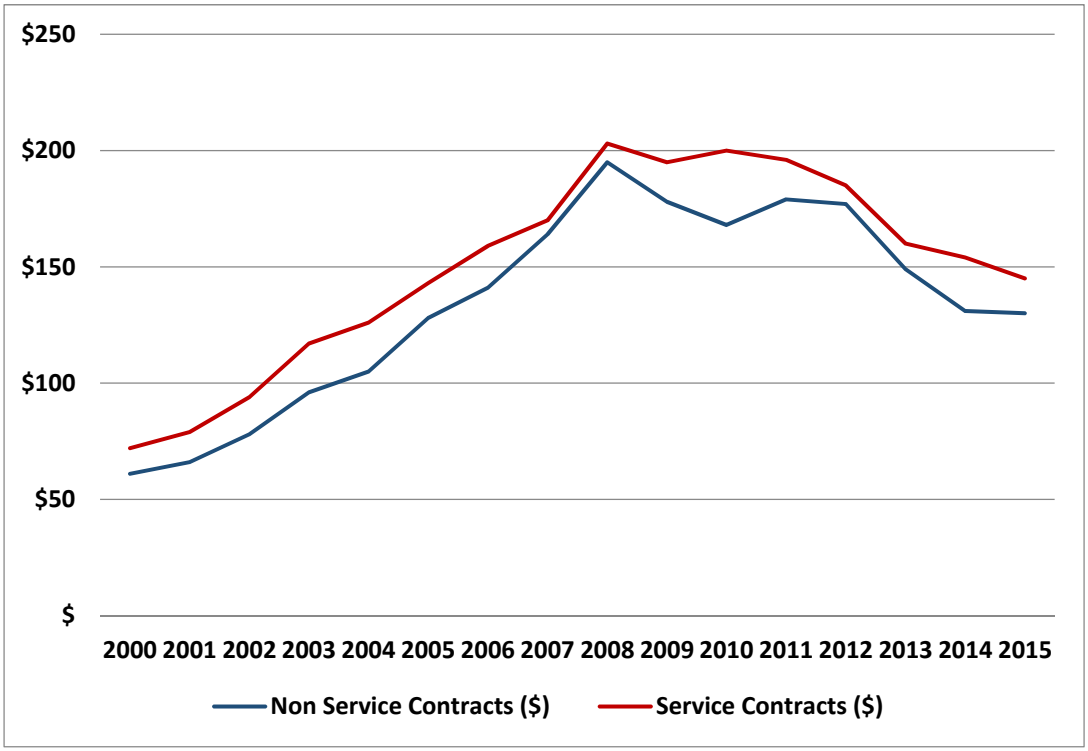

Figure 2. DoD contracts (**action obligations in $billions**; analysis of FPDS data)

PBSA Defined

The broad application of PBSA in the federal government, state and local government, and the private sector has produced many definitions of performance based contracting. The Federal Acquisition Regulation defines PBSA as "an acquisition structured around the results to be achieved as opposed to the manner by which the work is to be performed." The Department of Defense guidebook says PBSA "involves acquisition strategies, methods, and techniques that describe and communicate measurable outcomes rather than direct performance processes" (DoD, 2000). The definition used by the National Institute of Governmental Purchasing (2012)

adds an important distinction: compensation. Performance-based contracting "is a results-oriented contracting method that focuses on the outputs, quality, or outcomes that may tie at least a portion of a contractor's payment, contract extensions, or contract renewals to the achievement of specific, measurable performance standards and requirements." Figure 3 shows the proportion of PBSA within the context of overall DoD contracts spending.

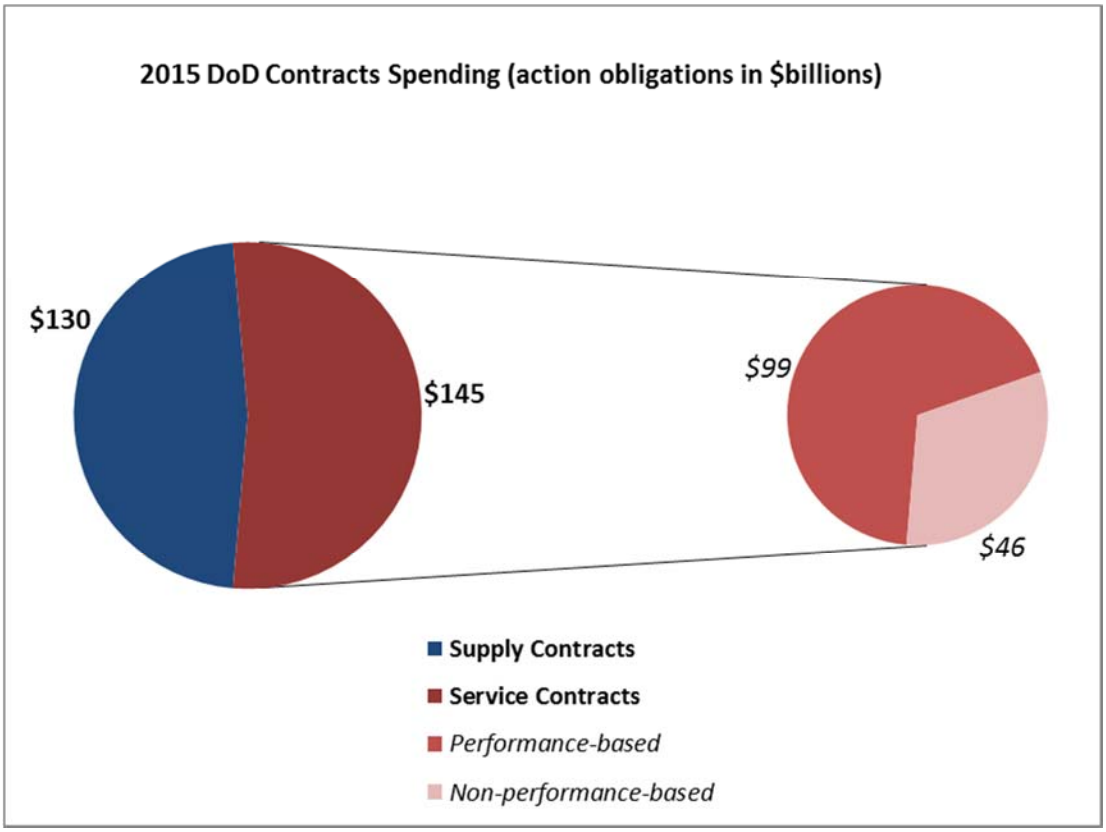

Figure 3. 2015 DoD contracts spending (**action obligations in $billions**; analysis of FPDS data).

Theoretical Basis

PBSA contracts specify a desired result, without stipulating the work be performed in any specific way. This method of contracting diverges from traditional contracting approaches (called compliance contracting or regulatory contracting), which do include narrow specifications on how the result is delivered. Such restrictions prevent the contractor from profiting from any innovations, and minimize the incentive to develop them in the first place.

PBSA, instead, permits greater flexibility. Contractors are free to pursue efficiencies and innovations that will reduce the cost of meeting the contract's requirements.

The goal of a PBSA arrangement is to align the incentives of the suppliers with the purchaser, transforming it so that what benefits the buyer can also benefit the supplier. Consider the case of an auto mechanic. Instead of paying on a transactional basis, (i.e. when the mechanic performs a repair when there is a malfunction), the driver pays the mechanic a fixed sum annually to maintain the car in an operational condition with a specified availability. This shift produces results by "changing the rules of cooperation so that the self-interested rational choices the agent is likely to make fulfill the outcomes that the principal desires" (Taylor & Shaver, 2010). Such an arrangement of incentives discourages suppliers from performing behaviors which are beneficial to themselves, but diminish the quality or availability of the service delivered.

There are other benefits to PBSA as well. For one, it may offer a resolution to the "historic disconnect between the motivation for governments to contract and how they actually go about contracting" (Martin, 2016). This disconnect arises when governments contract for services with the expectation that the superior efficiency of private firms will delivery those services more cheaply and reliably. However, by employing the rigid process specifications (which detail how the work is to be performed) common to non-performance-based contracting, governments hinder the contractor's ability to innovate and thereby minimize or negate the private firm's primary advantage; the strictness of such a contract may disallow a contractor from exploiting whatever innovations and resulting efficiencies. Such a contractual arrangement is, in part, self-defeating. By instead embracing performance specifications, PBSA allows contractors to profit from reduced costs or innovation. Furthermore, reducing the focus on specifications, also decrease public expenditure by reducing the need for oversight by government personnel. We elaborate upon the benefits and drawbacks of PBSA in Part III.

In the private sector, certain industries have embraced the use of performance based contracting. Commercial airlines, for instance, were among the first to do so. Performance-based contracting in this industry took the form of 'power-by-the-hour' contracts, in which aircraft engines and maintenance are provided for a fixed sum per flight-hour the engine is in

use, rather than as a fee for the service of engine maintenance. Previously, the engine manufacturers had less incentive to perform preventive maintenance, since they stood to gain from more lucrative repairs and maintenance in the future. It is important to stress that the incentives involved can be powerful. For example, Dennis and Kambil (2003) found that in 2003 General Motors' profit rate on after-sales maintenance was much higher than that earned through the sale of its cars. In contrast, under fixed sum per flight-hour schemes, manufacturers only receive payment when the engine is in use, thereby rewarding availability and reliability. This strategy ensures the engine is available more often and at lower cost.

The principles of PBSA have led to reforms in the health care industry as well, under the guise of pay for performance. Pay for performance introduces financial incentives to medical personnel to achieve more optimal patient outcomes rather than be compensated strictly for services performed. The similarities are evident. Furthermore, the clear links between private industry health care and public health care shows that PBSA concepts work in both sectors and between them. The Centers for Medicare and Medicaid Services sponsors a Value-Based Purchasing system, intended to pay "for inpatient acute care services based on the quality of care, not just quantity of the services they provide" (Center for Medicare and Medicaid Services, 2015).

Elements of PBSA

The *Guidebook for Performance-Based Services Acquisition (PBSA) in the Department of Defense* identifies four elements that are required, at a minimum, for an acquisition to be performance-based: (1) a performance work statement, describing the requirement as a measurable outcome; (2) measurable performance standards, used to define acceptable outcomes and determine if performance thresholds have been achieved; (3) remedies, the incentives and penalties used to provide incentives for performance; and (4) a performance assessment plan, detailing performance metrics as well as how the contractor will be evaluated (Gansler, 2000).

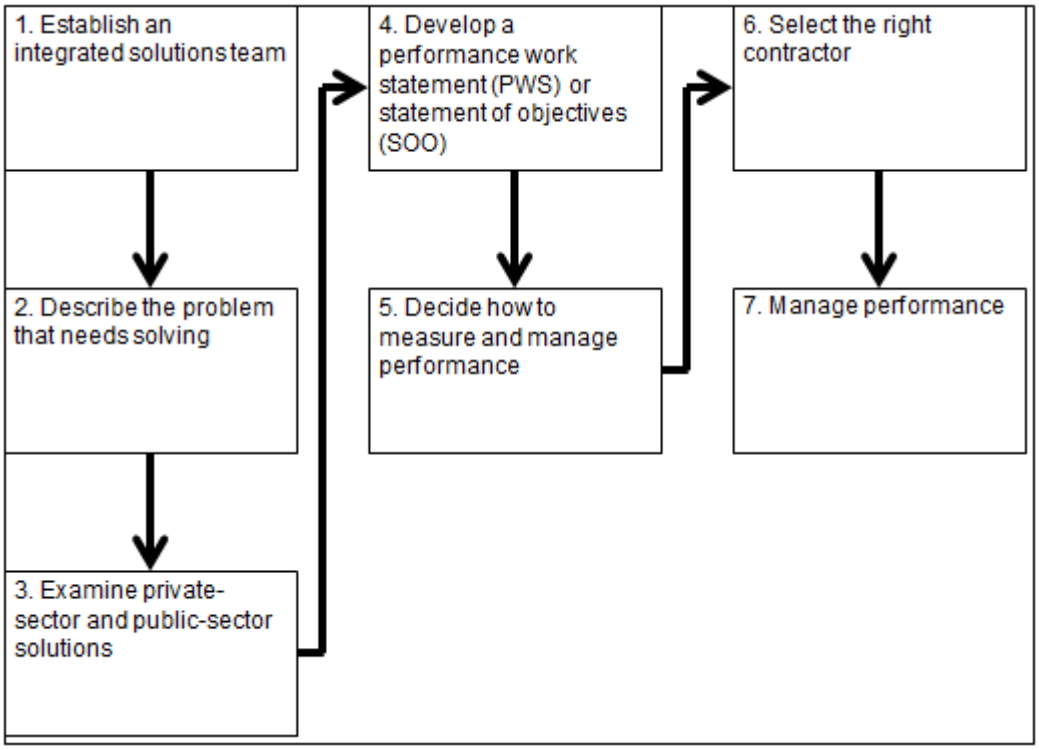

Figure 4. Seven Steps to PBSA (Interagency-Industry Partnership in Performance, 2006)

In 2006, the Department of Commerce, Department of Defense, Department of Agriculture, Department of Treasury, the General Services Administration, and a private firm, Acquisition Solutions, issued a joint guidebook entitled *Seven Steps to Performance-Based Services Acquisition*. The steps outlined by the guidebook are presented in Figure 4.

III. Benefits and Drawbacks

The benefits of PBSA have been espoused by numerous government and private-sector organizations. We have aggregated and summarized these benefits.

Benefits

Improved performance – PBSA helps align the objectives of the contractor with those of the government. Contractors, tasked with achieving outcomes as opposed to fulfilling tasks, (1) have the freedom to implement the strategy that would provide best value to the customer, (2) can update their methods without the need to change contractual obligations, and (3) have the incentive to achieve their best performance. These conditions foster the best effort and innovation on the part of the contractor, maximize the potential for the government to receive optimal contractor performance, and result in a "win-win" for both the government and the contractor.

Lower cost – Top commercial firms have used performance-based contracts to reduce costs of services even as they raise performance. The federal government, unlike the private sector in its budgetary processes, is not focused on profits; rather, it is focused on transparency; minimizing fraud, waste, and abuse; holding public servants accountable; and costs. The federal government thus often retains more cost-inefficient practices and processes, and will significantly benefit from PBSA's cost savings.

Increased innovation – PBSA encourages innovation by granting firms flexibility to determine the processes they use to perform the required function. Since they are incentivized throughout the contract to meet the required metrics while minimizing the cost, competitive firms will continuously innovate to improve their processes while reducing costs.

Greater use of commercial services – As noted in a memo issued by the Office of the Deputy Under Secretary of Defense for Acquisition Reform, "the vast majority of service requirements are commercial in nature" (Gansler, 2000). Although government policy explicitly embraces greater use of commercial off-the-shelf technologies and commercial standards, the DoD has been slow to fully implement these policies. By focusing on performance over process, PBSA helps to reduce barriers to entry for commercial firms.

More effective oversight – Traditionally, the DoD has spent a large amount of resources verifying that contractors comply with the detailed processes and procedures the government specifies in its contracts—regardless of whether such compliance produces better outcomes. For over two decades, the DoD has been committed to reforms that "ensure that oversight and review of contract management add value to the process and are minimally intrusive" (DoD, 1995). With the performance-based contract structure, the government can reduce the cost and increase the effectiveness of its oversight by tracking appropriately selected performance metrics to monitor contractor performance.

Greater contractor-government cooperation – DoD services are provided through an ever-widening network of contractors. Through several attributes listed above, PBSA encourages a greater contractor-government partnership that is more collaborative and less adversarial than traditional contracting, which implies that companies cannot be trusted to provide a service without being told how to do it. PBSA, on the other hand, is predicated on trust and accountability. Private companies are given more flexibility to find cost-effective solutions, and also agree to meet the required performance metrics, which are often used to determine incentives.

Greater agility – Contracting for services affords a greater surge staffing capability, giving the DoD a cost-efficient way to augment capabilities during times of increased demand. On the other hand, during times of decreased demand, the DoD can quickly save operating costs by reducing its reliance on services contractors, something not possible with full-time government employees. Moreover, when contracting for services, there is no long-tail cost: the DoD does not have any financial obligation to contractors once the service is delivered or no longer required. Services contracting can also provide the DoD with quick access to required expertise; by contrast, the time required for the DoD to advertise a job position, review applications, perform job interviews, and make job offers is often considerably longer.

Drawbacks

Drawbacks, both real and perceived, have also emerged.

Perception that the government has less control – Critics of PBSA argue that the government, by not issuing explicit specifications, will have less control, and as a result, could receive less

satisfactory performance. This has been shown not to be the case, as the government must identify its critical desired outcomes and then identify the appropriate performance metrics necessary to incentivize the contractor. In many ways this is a superior way of managing outcomes in comparison to the traditional method, which has proven to be highly inefficient.

Questionable applicability – Several critics of PBSA argue that this strategy can only be used for certain types of services. Most of these critics argue that PBSA is best used for contracts that include "many common, routine, and relatively simple services" (Edwards & Nash, 2007). PBSA should not be used when objectives "are too long-term and complex to permit complete specification of results and competitive pricing at the outset of contracting" (Edwards & Nash, 2007).

Ineffective metrics – Appropriately chosen metrics (1) direct contractor efforts and (2) provide effective oversight. Although concern for appropriate metrics is valid for all DoD contracts, ineffective metrics particularly undermine PBSA contracts because they form the basis of evaluating contractor performance. Metrics and corresponding incentives help align the interests of the contractor with the government. If the two are not aligned because metrics misdirect contractors towards unimportant services, then such contracts will be implemented with suboptimal results. Additionally, the government's oversight must rely on accurate, independently verified data. In many cases, however, the contractors usually furnish the government with this data, presenting a potential conflict of interest. For the incentives to be effective, the government must have reliable data that it can use to provide oversight of a contractor's performance.

IV. Trends in PBSA

In a formal sense, performance based contracting entered the government world when the Office of Federal Procurement Policy (within the Office of Management and Budget) issued Policy Letter 91-2. The letter declared “It is the policy of the Federal Government that (1) agencies use performance-based contracting methods to the maximum extent practicable when acquiring services” (OFPP Letter 91-2, 1991). Subsequent Federal legislation like the Government Performance and Results Act (GPRA) of 1993, the Federal Acquisition Streamlining Act, and the Federal Acquisition Reform Act of 1995 formalized this commitment.

In 1991 the Office of Federal Procurement Policy (within the Office of Management and Budget) issued Policy Letter 91-2, which ushered in the formal adoption of PBSA by government. The letter declared “It is the policy of the Federal Government that (1) agencies use performance-based contracting methods to the maximum extent practicable when acquiring services and (2) agencies carefully select acquisition and contract administration strategies, methods, and techniques that best accommodate the requirements” (OFPP Letter 91-2, 1991). Subsequent Federal legislation like the Government Performance and Results Act (GPRA) of 1993, the Federal Acquisition Streamlining Act, and the Federal Acquisition Reform Act of 1995 formalized this commitment.

The Federal Acquisition Regulation was not amended to incorporate PBSA policies contained in OFPP’s policy letter 91-2 until 1997 (GAO, 2008). FAR Part 37 provides the DoD with the policy and procedures that are specific to the acquisition and management of contracted services. This Part also identifies performance-based acquisition as the DoD’s “preferred method for acquiring services…[which should be used] to the maximum extent practicable,” except in certain circumstances. FAR Part 37 also states that the DoD should facilitate greater use of PBSA by reducing barriers to competition and by providing sufficient training to DoD service acquisition personnel.

In 2000, the DoD formalized its commitment to PBSA. Then-Under Secretary of Defense, Acquisition, Technology, and Logistics Jacques Gansler issued new guidance: “In order to

ensure that the DoD continually realizes these savings and performance gains, I establish, at a minimum, that 50% of service acquisitions, measured both in dollars and actions, are to be performance-based by the year 2005."

Historical Trends

Within service contracts, the composition of performance-based and non-performance-based has changed substantially over the last 15 years. Analysis of the Federal Procurement Data System (FPDS) shows that PBSA now constitutes a majority of total DoD service contract spending. Figure 5 shows the composition of PBC and non-PBC contracts among all DoD service contracts. In absolute terms, non-performance contracts have declined by more than two-thirds since their 2008 peak, from $146 billion to $46 billion in 2015, while performance-based contracts have plateaued at approximately $100 billion in 2014 and 2015.

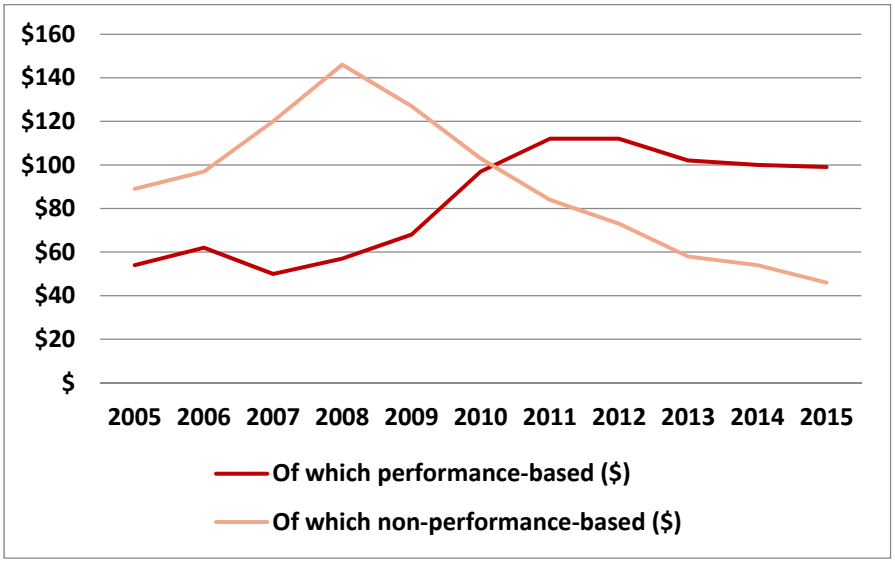

Figure 5. DoD service contracts (**action obligations in $ billions**; analysis of FPDS data)

To a lesser extent, civilian service contracting has seen the same change in contract composition. Performance-based contracts represent more than 50% of all civilian service contracts, and, in 2015, accounted for $70 billion of the total $125 billion spent. Figure 6 shows the composition of service contracts outside of the DoD. The pattern is smoother overall, but shows PBSA contracts overtaking non-PBSA contracts at the same point in time.

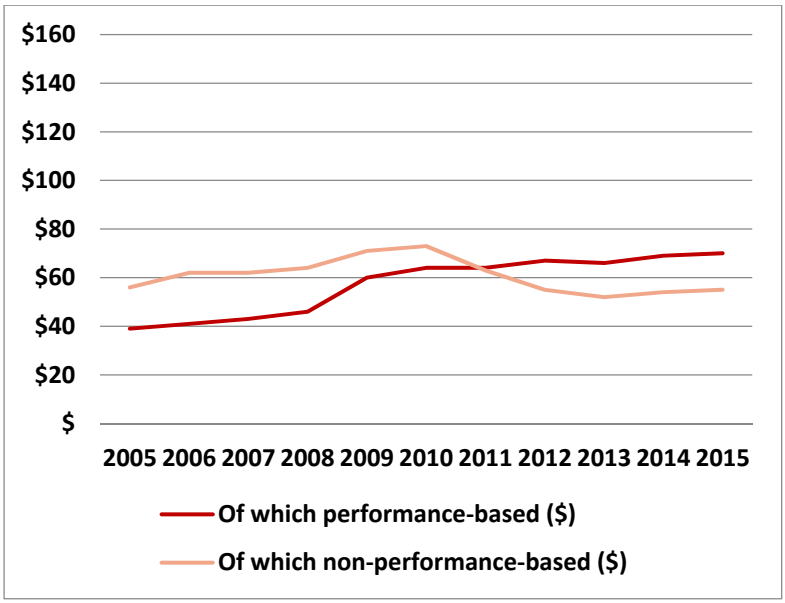

Figure 6. Civilian service contracts (**action obligations in $billions**; analysis of FPDS data)

It is also noteworthy that as PBSA began to overtake non-PBSA in terms of total services contract spending, so, too, did the DoD begin to overtake civilian government in its rate of PBSA (see Figure 7).

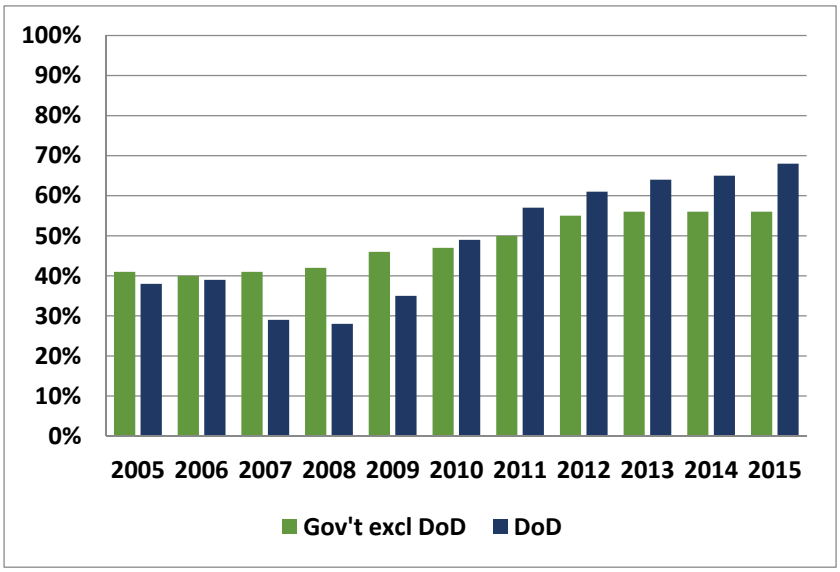

Figure 7. PBSA contracts (**action obligations [$]**; analysis of FPDS data)

Figure 8 depicts total spending on services contracts and the percentage of the spending that was performance-based over the last 15 years. The figure also shows highlights important

events that that undoubtedly impacted the use of PBSA. Note that following the 2000 issuance of the directive to increase PBSA such that it would represent 50% of all service contracts spending by 2005, PBSA increased by more than 15% in 2001. The beginning of the War in Iraq saw a continued increase in both services spending and reliance on PBSA. However, between 2006 and 2007 PBSA declined, reaching a four-year low in 2008 (regarded as the height of the war), even as overall contracts spending spiked at over $200 billion.

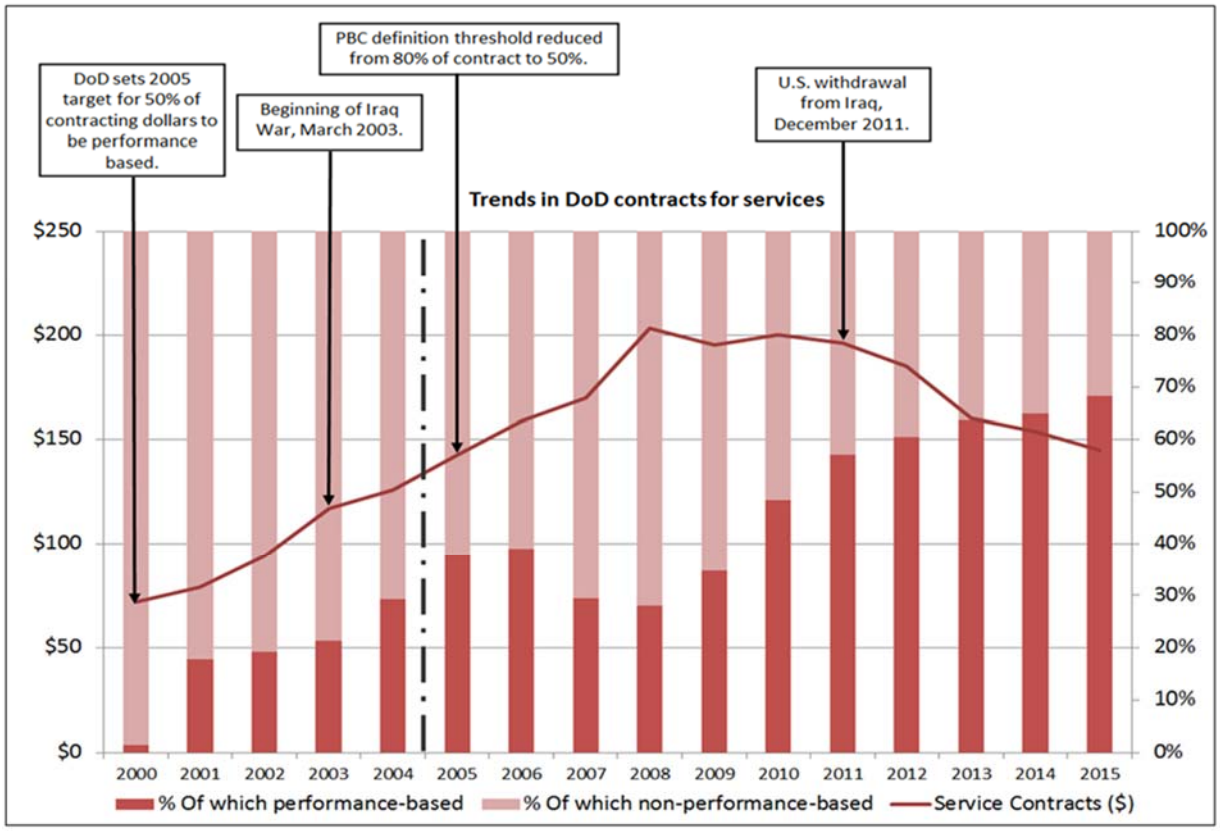

Figure 8. Trends in DoD PBSA (action obligations in $billions; analysis of FPDS data)

This decline occurred despite a change in FPDS classification of PBSA contracts. Prior to 2005, FPDS required that "a minimum of 80 percent of the requirements under the procurement action must meet the FAR standards." In 2005, the minimum was reduced to 50%. All else equal, one would expect this change to increase PBSA contracts spending. That this was not the case might suggest that the spending figures alone understate the impact of the War in Iraq on PBSA. This decline is unsurprising. Edwards and Nash, Jr. (2007), who have been critical of PBSA—specifically, its applicability to the provision of complex services—assert that "it is unrealistic to ask agencies to specify services at the time of contract award in

clear, specific, objective, and measurable terms when future needs are not fully known or understood, requirements and priorities are expected to change during performance, and the circumstances and conditions of performance are not reliably foreseeable." There is no doubt that this scenario often prevails during war, which likely explains the apparent reluctance to use PBSA. Interestingly, however, Prior research (e.g. Lucyshyn, Rigilano, & Safai, 2016) indicates that PBSA can be implemented successfully during times of conflict, provided that contracts are structured appropriately.

PBSA at Present

Despite falling short of the mandate that 50% of service contract be performance-based by 2005, PBSA spending has increased dramatically within the DoD. In 2015, 68% of DoD contracts for services were performance-based. This increase has been more or less uniform throughout the department. As of FY 2015, PBSA rates for the military service branches were as follows: Air Force, 69%; Army, 62%; and Navy, 58%. The appendix of this report provides a more detailed analysis of PBSA rates for the military service branches.

Moreover, as indicated in Figure 6, the DoD has outpaced civilian government in the use of PBSA (68% vs. 56% in FY 2015). Of course, this high-level data may not tell the whole story. As indicated previously, the change in threshold of a contracts performance elements from 80% to 50% to be categorized as performance based, is not reflected in this data. In addition, some contracts may be performance-based "in name only," either lacking enforcement mechanisms or disbursing payments even when performance is suboptimal. In other words, the data may not accurately reflect the extent to which performance-based strategies are actually applied.

While PBSA may appeal to program officials from a theoretical standpoint, some may be reluctant to embrace this strategy for a variety of reasons, including cultural inertia within the DoD, contractor reluctance, and/or an inability (lack of personnel or technical capacity) to measure contract performance. Indeed, a recent DoD Inspector General (DoD IG) report evaluated 60 DoD performance-based contracts. The report revealed that DoD contracting personnel failed to properly negotiate and evaluate most of the contracts. For example, in 33

instances the DoD failed to clearly define criteria for successful completion of various tasks, but disbursed payments to the contractors on a regular basis (DoD IG, 2013).

More generally, a wealth of studies dating back to the 1980s (e.g. Hart & Holmstrom, 1987) suggests a disinclination on the part of managers to use pay-for-performance strategies for reasons that are "distinctly uneconomic" including notions of fairness, equity, morale, trust, social responsibility, and culture (Baker, Jensen, & Murphy, 1998).

PBSA and Performance-Based Logistics

Data on one form of PBSA—Performance-Based Logistics (PBL)—is mixed. The *Defense Acquisition Guidebook* defines PBL as "…the purchase of support as an integrated, affordable, performance package designed to optimize system readiness and meet performance goals for a weapon system through long-term support arrangements with clear lines of authority and responsibility." Application of PBL may be at the system, subsystem, or major assembly level depending on program unique circumstances and appropriate business case analysis.

While overall PBL expenditure has increased steadily over the last 15 years, likely due to its expansion within successful programs, there were only 87 PBL programs in 2013, compared to over 200 in 2005. PBL programs evolve along a common trajectory. With new systems, cost-plus reimbursement contracts followed by cost-plus incentive contracts are used in order to provide the government customer and the provider with a cost baseline. Once the costs, risk factors, and system failure modes and rates have stabilized, the program transitions to the use of fixed-price contracts where providers are paid a fixed cost or fixed rate (e.g. per hour, per mile) so long as operational readiness is achieved at the specified level(s). Over time, the provider makes improvements to its supply chain, logistics networks, operations, and the system itself in order to reduce costs and increase profitability. In the "terminal stage" of its evolution, the exemplary PBL achieves consistently high availability and has optimized maintenance processes and the associated logistics networks on which they rely. The program operates at lower risk, from both a cost and technical perspective.

Despite successful outcomes, there are indications that some longstanding PBL programs are reverting to traditional contracting approaches. Recently, for instance, a high-profile, award-winning PBL program, the High Mobility Artillery Rocket System, transitioned inventory

management from the contractor to the government and reverted to cost-reimbursement contracts—as opposed to fixed-price— in an effort to reduce costs. This program is still categorized as "performance-based" in that it relies, at least ostensibly, on performance metrics for inventory fill-rates.

PBSA and contract type

However, data on the use of fixed-price PBSA lends support to the supposition that the DoD is increasing its reliance on performance-based strategies (see Figure 9). While it is important to stress that PBSA is a strategy amenable to the use of different types of contracts, fixed-price contracts are generally preferred (FAR 37.102), especially once an acquisition program is well established. Fixed-price contracts incentivize providers to innovate in order to reduce their costs thereby increasing their profit. The cost reductions achieved by the provider can then be taken into account by government in determining baselines for future contracts. Figure 9 indicates that within the DoD, the trend in fixed-price contracting tracks closely with the PBSA trend, both of which overtook "non-performance-based" and "other than fixed-price" in 2010.

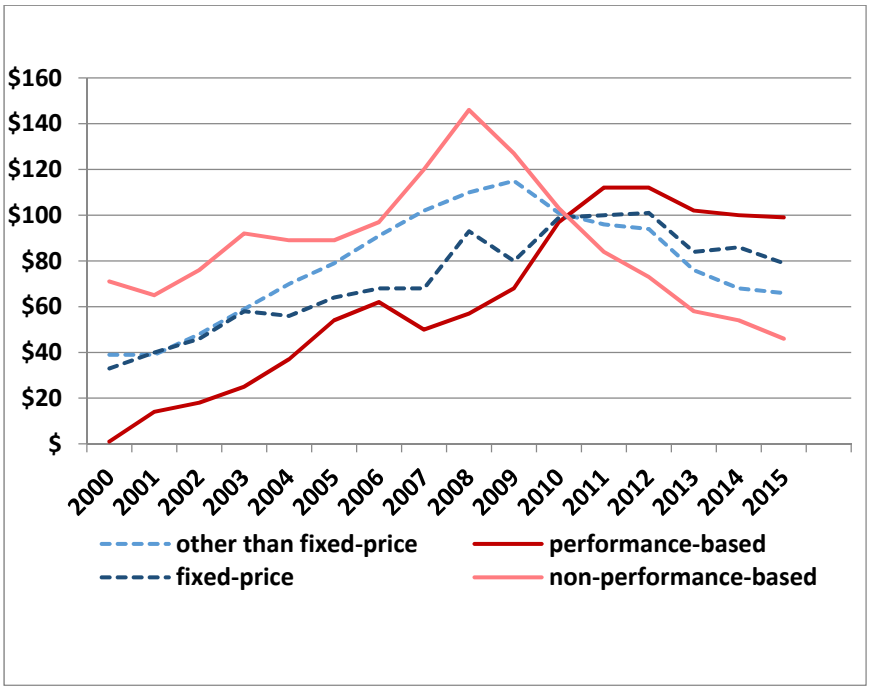

Figure 9. DoD services contracts (**action obligations in $billions**; analysis of FPDS data)

At the same time, the figure makes it clear that the fixed-price contracting trend may deviate from the performance-based one. During the height of the Iraq War, in 2008, fixed-price contracts and "non-performance-based" spiked.

In fact, between 2006 and 2013, most performance-based contracts were other than fixed-price (see Figure 10). As of FY 2015, roughly half of all DoD performance-based contracts were fixed-price. This finding stands in contrast to the relative composition of civilian services contracts, 38% of which were fixed price as of 2015.

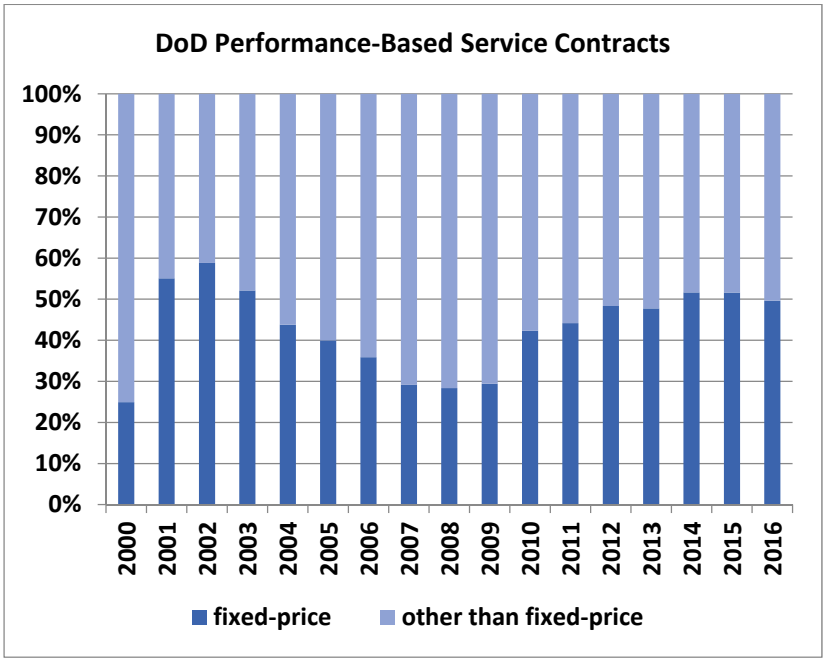

Figure 10. DoD Performance-based service contracts (**action obligations [$]**; analysis of FPDS data)

V. Cases

Stryker PBL

The U.S. Army's first new vehicle since the early 1990s, the M1126 Stryker is a rapidly-deployable wheeled armored vehicle. Stryker successfully combines resiliency, mobility, and versatility, creating and the ideal combat vehicle and quickly becoming an essential tool for the United States Armed Forces.

As top Army officials became increasingly frustrated with the attributes of existing combat vehicles—many of which were either too heavy to be deployed efficiently or too light to be effective in combat—the Army began its search for a new armored vehicle for its fleet. The acquisition process was accelerated as US troops in Iraq and Afghanistan began to encounter unprecedented threats from improvised explosive devices (IEDs), heightening the need for a new armored vehicle. Indeed, the Stryker vehicle was among the fastest acquisitions of a major weapons system in U.S. history.

Awarded to General Dynamics Land Systems in 2000, the initial PBL for the Stryker vehicle fell under a Cost-Plus Fixed-Fee (CPFF) portion of a larger contract for vehicle manufacture and delivery. The CPFF covered "all fielded vehicles in garrison or deployed" (Coryell, 2007) for a five year period. Under the agreement, GDLS would produce and repair and maintain vehicles at four primary locations: Anniston, Alaska, Ontario, and London (Denizer, 2007).

The CPFF contract was chosen to provide maximum flexibility to meet rapidly-evolving conditions while allowing Army officials to gauge the costs associated with different levels of performance so that a Firm Fixed Price (FFP) contract could be used at a later point (Coryell, 2007). The initial contract specified a single metric, an operational readiness rate (ORR).

Vehicles were expected to meet a 98% ORR during fielding and training exercises, and at least a 90% ORR for deployed vehicles.

GDLS would go on to win two follow-on PBL contracts, in 2007 and 2012, valued at $1.5 billion and $2.5 billion respectively, which would extend sustainment and support for the growing Stryker fleet. In 2007, some 1,500 vehicles have been fielded; by 2012, this number had risen to close to 2,500 (DoD IG, 2012).

For the first two Stryker brigades that deployed to Iraq, Army officials reported operational readiness rates averaging 96% from October 2003 through September 2005 (GAO, 2006a). In addition, the Army consistently noted that contractors were providing impressive levels of support and according to a 2006 GAO report, more knowledgeable and efficient than their military counterparts with regard to the specifics of the Stryker vehicles (GAO, 2006a). The program's use of contractor personnel for sustainment efforts allowed soldiers on the ground to participate in extra trainings and perform other necessary, military specific, roles (GAO, 2006a). Pre-existing relationships between soldiers within SBCT and deployed contractors also created a successful and effective work environment overseas.

From a cost perspective, however, contract performance is less clear. In 2012, The DoD Inspector General asserted that the follow-on contract's continued use of a sole metric (readiness), in combination with a high-ceiling, cost-plus contract, which unduly incentivized the contractor to accumulate significant excess inventory valued at $335.9 million (DoD IG, 2012). The Army responded that the excess inventory could be attributed, in part, to contractor improvements in reliability, and that the spare parts would be used eventually, albeit at a slower pace than anticipated (DoD IG, 2012).

Given the Army's heavy reliance on Stryker during the Iraq War, changing operational tempos, and the lack of historical cost data, the use of a cost-plus fixed fee contract (as opposed to a fixed-price contract) was well-founded. However, it appears that the Army could have implemented better cost controls, perhaps by tying the fixed fee to an agreed-upon cost-per-mile metric. As indicated in the previous section, the DAU lists cost-per-unit metrics as essential indicators of PBL performance.

Navy/Marine Corps Intranet

The Navy-Marine Corps Intranet (NMCI) is a major program that provides information technology services to the United States Navy and Marine Corps. NMCI seeks to provide a streamlined, secure, enterprise-wide network to support the naval shore establishment and connect it with forces at sea by interfacing with the at-sea network. In 2000, the Navy signed a 5 year performance-based contract with Electronic Data Systems Corp (EDS) worth an initial $4.1 billion with a three year option to extend. The Navy expected the network to have 412,000 to 416,000 operational computers, or "seats" by fiscal year 2004. However, deployment of the network was slower than planned and the program suffered setbacks that delayed its implementation, reduced its desired responsiveness, and increased its cost.

Early in the Navy/Marine Corps Intranet (NMCI) development, the Navy made two important decisions. First, the services of the NMCI would be largely outsourced. Second, the contract would be performance-based.

The Navy primarily sought to contract with the private sector because it did not believe that the Navy had the capability to develop and implement such a holistic information system. Given that the Navy did not believe that it could develop such a capability, and that it wished to implement the NMCI as quickly as possible, contracting much of the technical work to the private sector was the Navy's only realistic option.

The Navy produced an extensive performance plan for the program. The Navy started by identifying its two strategic goals, information superiority and fostering innovation. The Navy then identified nine strategic performance measurement categories and related them to the strategic goals of the NMCI program. These nine categories were interoperability; security and information assurance; workforce capabilities; process improvement; operational performance; service efficiency; customer satisfaction; program management; and network operations and

maintenance (GAO, 2006). The plan included "metrics, targets, and comparative baselines that were to be used for the first annual performance report... [along with the Navy's commitment to] fully develop performance measures for each of the categories and... produce an annual report on NMCI's performance in each of the categories" (GAO, 2006b).

In October of 2000, the Navy awarded the NMCI contract to Electronics Data Systems (EDS). The contract was a firm-fixed-price, indefinite-delivery/indefinite-quantity contract with performance incentives. The quality of performance was measured according to a set "contractually specified performance level expectations" called Service- Level Agreements (SLAs). The terms of the NMCI contract include delivery and maintenance of workstations and desktop applications, transmission of voice, video, and data, and infrastructure improvements.

The sole-source contract had a 5-year base agreement with a minimum value of $4.1 billion, along with a 3-year option for an additional $2.8 billion. The contract required delivery of approximately 415,000 seats. The contract was subsequently restructured in 2003 into a 7-year, "$6 billion contract with a 3-year option for an additional $2.8 billion" (GAO, 2006b).

The NMCI experienced development difficulties and program revisions early in development initiation. These difficulties became evident once the Navy and the contractor tallied the total number of legacy programs currently operating on Navy and Marine legacy systems. Legacy programs presented numerous compatibility issues. Delays stemmed from the need to (1) undertake an extensive review to list and categorize all legacy applications, (2) develop a new strategy to digest the number of applications that were orders of magnitude larger than originally believed, and finally, (3) put the new implementation strategy into effect. According to Jordan (2007), "it was initially assumed that the number of [outdated legacy] applications was in the thousands. After contract award, the Navy and EDS were shocked to find the number was actually 100,000". The contract goal of transitioning legacy applications into 500 NMCI accredited programs was revealed to be a much more difficult task than initially thought.

By May 2002, only 4,000 seats had been cutover. Due to NMCI's slow progress, Congress, in December 2002, sought to strengthen oversight by requiring authorization to increase the seat limits beyond 60,000, and then up to 150,000.

In 2003, EDS shareholders filed a class-action lawsuit against the company alleging security fraud stemming from second quarter losses, primarily due to "problem contracts." According to EDS, difficulties with the NMCI contract resulted in a $334 million pretax loss on the program through 2003 (Verton, 2003). Subsequently, the Navy and EDS restructured the NMCI's contract and implementation schedule. One report estimates that EDS losses averaged $800 million annually in the first years of the contract, totaling $3 billion (Jordan, 2007).

Acknowledging the NMCI's shortcomings, the Navy awarded a one-year $5.9 million contract to BearingPoint in December 2006 to help manage IT services (Beizer, 2006). BearingPoint was awarded a larger 5-year contract, with a maximum value of $57.9 million in October 2007, principally to "design and operate a secure, battle-ready global information technology network for the Naval Network Warfare Command" (Hubler, 2007). This action solidified the subtle—if unofficial—shift away from the NMCI's initial goal of information superiority (in the form of a battle-ready information system) to simply furnishing the Navy with an operational information network.

The NMCI experience demonstrates that firm-fixed-price contracts for high-risk, ambitious programs do not necessarily reduce program costs. Rather, fixed-price contracts are ideal when requirements are known and stable, and the technical risk is low. The experience also shows that the metrics included in performance-based contracts may produce unfavorable outcomes if consequences are not anticipated. For instance, the metrics involving e-mail transfers and the percent of bandwidth used to provide connection to external networks provided EDS an incentive to severely limit the size of e-mail attachments, frustrating many who were unable to transmit larger files.

Following the program's early challenges, NMCI steadily improved. On September 30, 2010, the NMCI contract ended and the new Continuity of Services Contract (COSC) began. Today, NMCI is one of the largest intranets in the world, providing end-to-end secure IT services to more than 400,000 computers and 800,000 users across 2,500 locations (U.S. Navy, 2017). At

present, the Navy is transitioning NMCI services to the Next Generation Enterprise Network (NGEN). The NGEN acquisition approach will allow NMCI to transition from a “monolithic model” to a segmented business model that allows for periodic competition of segmented services (U.S. Navy, 2017).

VI. Findings, Recommendations, and Conclusion

Findings

Below is a summary of our findings.

- Based on the available data, the DoD has made impressive gains in its implementation of PBSA.
- In 2016, close to 70% of DoD services contracts were performance-based.
- The rate of PBSA within the DoD has increased steadily since 2010, even as overall spending on services has decreased.
- Despite increases in the overall rate of PBSA, PBL implementation, in terms of the number of programs, has declined.
- The DoD has outpaced the rest of the government in the implementation of PBSA.
- DoD guidance states that fixed-price contracts are preferred within the context of PBSA. The proportion of DoD performance-based contracts that are fixed-price has increased to approximately 50% in 2016, up from a low of 29% in 2007. The civilian PBSA rate was 38% in 2016.
- PBSA is not the right choice for all acquisitions and even when it is the right choice, performance-based contracts are not always structured appropriately.

Recommendations

Based on these findings, we provide the following recommendations.

- **Ensure proper alignment of government objectives with provider incentives.** PBSA arrangements can be more challenging to develop and manage than other contract types. Just as an appropriate program structure aligns the incentives of the customer (the government) and the support provider, leading to a win-win scenario, an inappropriate structure can create perverse incentives, and result in undesired or unintended consequences.
- **Improve the training of the acquisition workforce.**
  The DoD should also increase the training of its employees involved in the acquisition of services. Training should emphasize the importance of a robust requirements

definition process, the need for clear performance requirements, measurable performance and standards.

- **Cost-plus performance-based services contracts must apply stringent cost controls.**

  Categorizing a contract as performance-based does not make it so, especially with regard to cost-plus contracts. While some performance-based services acquisitions are best suited to cost-plus contracts, they must be structured appropriately to ensure optimal outcomes. Carefully-considered contract ceilings, cost-per-unit usage rates, and logistics footprint constraints should be included in cost-plus contracts. Without these features, contractors may be incentivized to accrue surplus inventory beyond what is necessary to meet the performance requirement.

Conclusion

Steven Kelman, former administrator of the Office of Federal Procurement Policy, observed that historically, "the balance between attention to the goals the [procurement] system should pursue and the constraints under which the system operates was skewed towards assuring compliance with constraints more than pursuing goals." Kelman notes that in recent years there has been a major improvement in the culture of the federal procurement system "in a more performance-oriented direction" by which he means that the present system is more focused on delivering timely, best-value products and services. If Kelman is right that performance has improved, then there can be little doubt that the growth in PBSA, as documented in this report, is partially, if not mostly, responsible.

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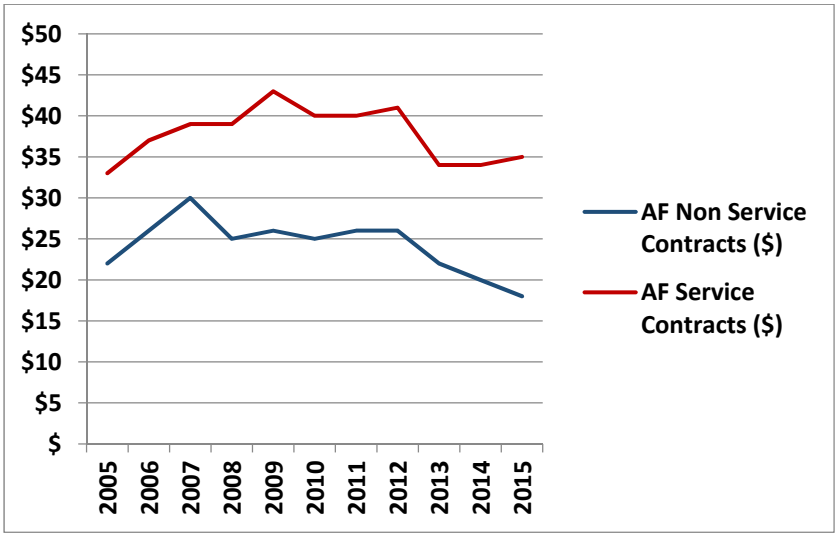
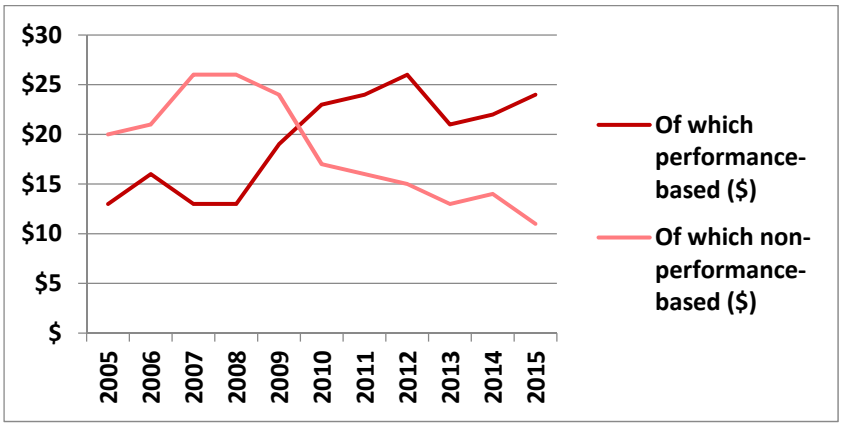
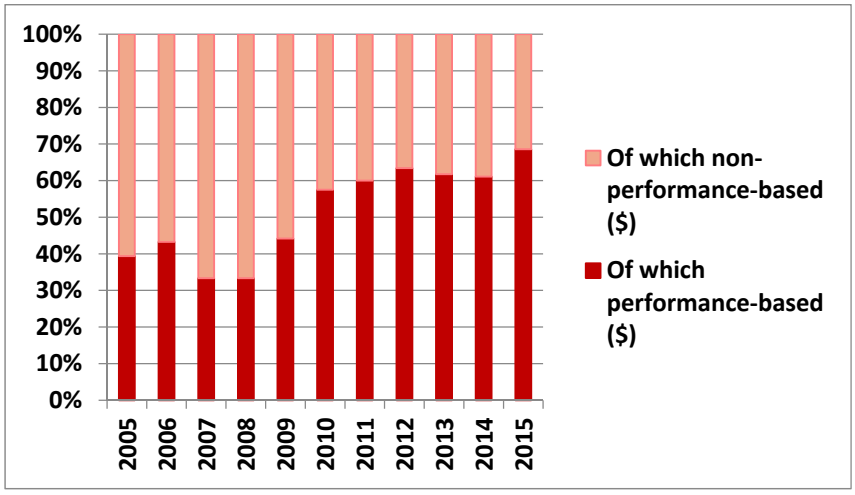
Appendix: PBSA Rates for Military Services

Air Force







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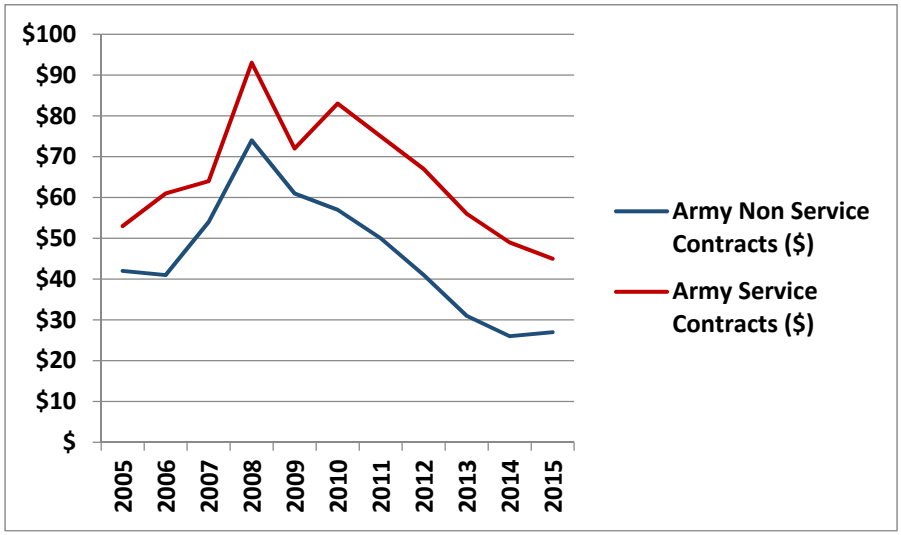
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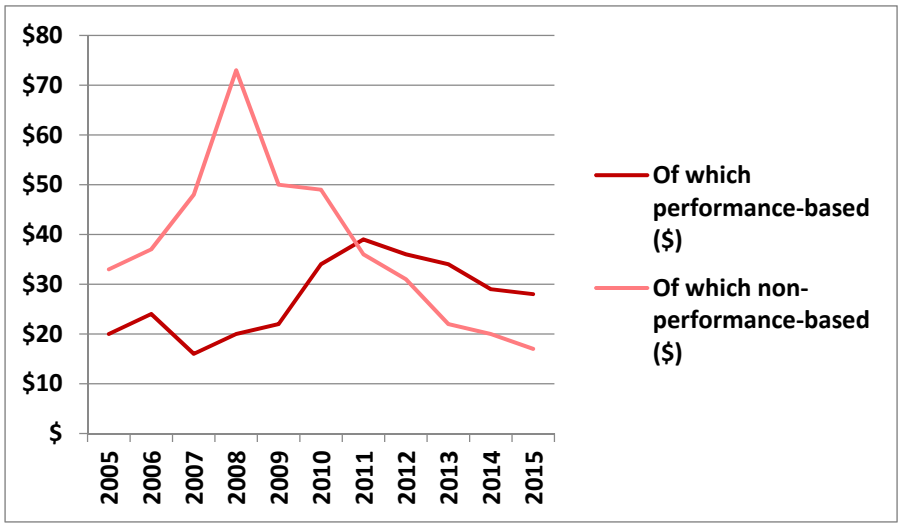
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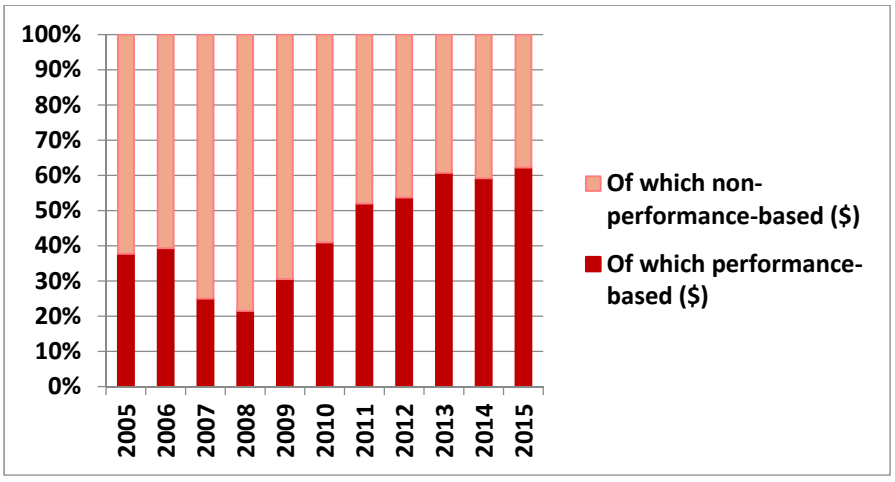
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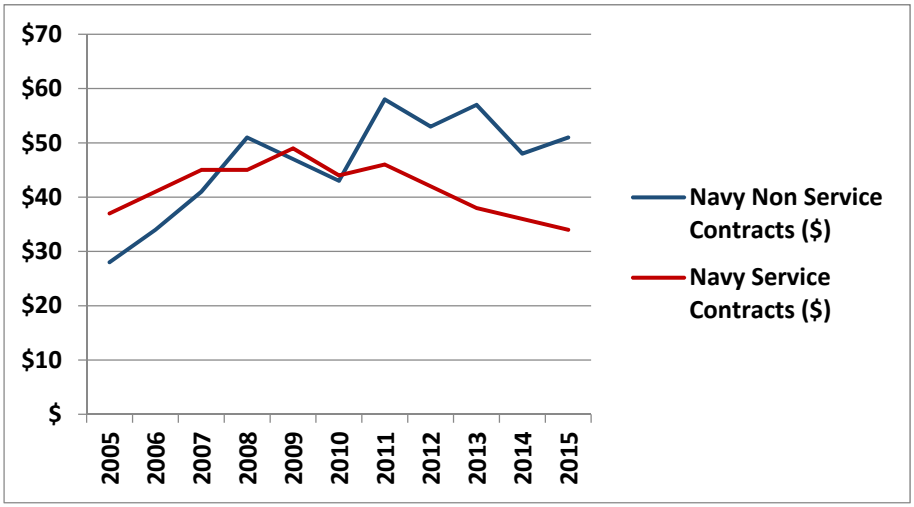
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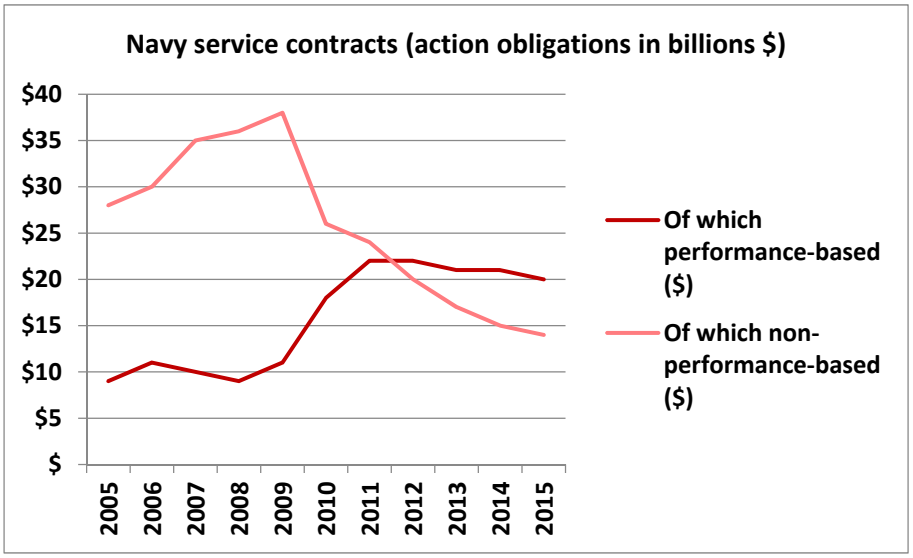
Navy Service Contracts ($)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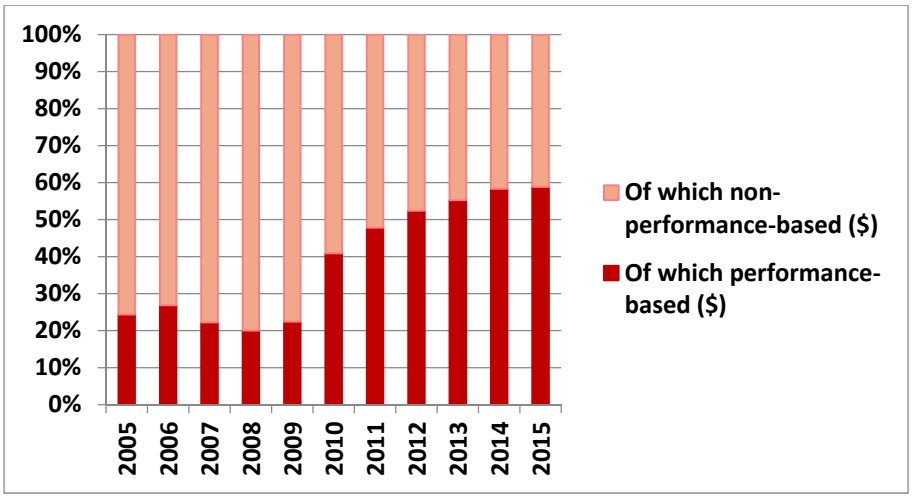
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