

Perspectives on Federal Acquisition and Complex Contracting with Professors Trevor Brown and David Van Slyke

By Michael J. Keegan

Federal Agencies Contract for Goods and Services

Federal agencies need critical goods and services to perform their core missions. A recent IBM Center report, *A Guide for Agency Leaders on Federal Acquisition*, highlights the Black Hawk helicopter in the interdiction of Osama Bin Laden. Without the Black Hawk, the mission doesn't succeed. In the absence of th[e Healthcare.gov] website working successfully, the Affordable Care Act doesn't work successfully. Even more narrowly, with the website you're trying to target a specific group of people. In the case of the Affordable Care Act, it's healthy young people. You need [healthy young people] to enter the insurance pool, and a slick, fancy, user-friendly website—an access point—is one way to attract them. If this cohort doesn't sign up in significant numbers, a critical component of that insurance pool is lost; then prices are going to rise. Within this context, [you are] not simply purchasing a website. You're buying an integral part of your program. This example illustrates perfectly what acquisition is now for federal agencies; it enables mission success and program performance.

It's important to get these purchases right and that requires strategic decision-making. Acquisition is not just buying stuff; it's about thinking through the purpose and end of what you are buying and why. Are you buying only products, or buying the ability to do something that the government itself lacks the expertise, capability, or capacity to execute?

Basic Phases of the Federal Acquisition Lifecycle

Though an expert may tell you there are hundreds of steps in this process, I'll break it down simply into three phases—pre-award, award, and post-award.

The **pre-award phase** includes identifying the product's characteristics, assessing the market for the product, and consulting the regulatory guidance on how to solicit the product. The first step in any acquisition is to define what's



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needed and determine whether a product procured from the market can fulfill that need.

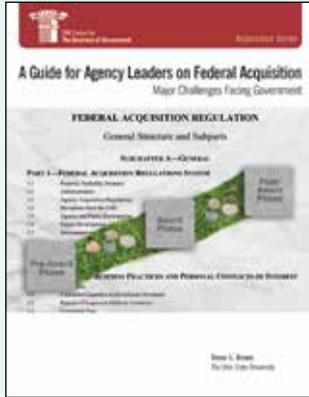
The **award phase** includes tasks associated with actually purchasing the product: running the solicitation, evaluating proposals, and negotiating the terms of the purchase with whatever vendor is selected.

The **post-award phase** includes all tasks associated with executing the contract, notably monitoring vendor performance, evaluating and testing the product upon delivery, implementing any relevant incentives, providing compensation, renegotiating contract terms, and terminating or renewing the contract.

During post-award, things become a little less clear, and there's much more discretion. During this phase, government managers decide how to engage the awardee and how often, how to set and negotiate the rules of the relationship and the exchange, and how to work together.

Library of Acquisition Research from Brown, Potaski, and Van Slyke

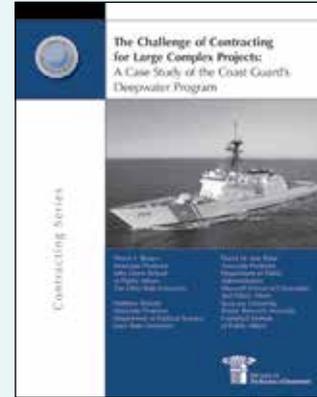
The following highlights the IBM Center research on federal acquisition performed by Professors Brown, Potaski, Van Slyke, either individually or as a group.



A Guide for Agency Leaders on Federal Acquisition



Contracted Versus Internal Assembly for Complex Products: From Deepwater to the Acquisition Directorate in the U.S. Coast Guard



The Challenge of Contracting for Large Complex Projects: A Case Study of the Coast Guard's Deepwater Program

Much of this research contributed to the work culminating in the publication of their *Complex Contracting: Government Purchasing in the Wake of the US Coast Guard's Deepwater Program*, published by Cambridge University Press.

Of the three phases, the award phase gets most of the attention. We hear about the RFP, the bid, the award decision, and how the contract is structured. We tend to hear less about the pre-award or the post-award phase. Yet in both, management is critical. Buying is managing. The whole procurement process is ... about managing relationships within established rules (e.g., Federal Acquisition Regulation) toward an ultimate end.

Evaluating an Acquisition

The FAR sets the rules on what's permissible in contracting. It specifies the goals of federal acquisition. Buried in there are two approaches to setting the criteria by which we would evaluate an acquisition. One is what's called "best value." It typically involves three criteria, the sort of trinity of contracting—cost, performance, and schedule or delivery:

- Cost: how much does it cost? Did it come in at the price we expected?
- Performance: does it do the things we want it to do?
- Schedule: did it come in on time?

In a best value acquisition, a procurement official is allowed to balance each proposal along the three criteria and make tradeoffs.

The FAR also specifies "lowest price technically acceptable" (LPTA). All three criteria—cost, quality and schedule—are still in play, but here, the argument is, if we can precisely define the product, we can say, as specifically as possible, here are the performance criteria. It's technically acceptable. Well, then, we're going to focus on price. So we're going to minimize our selection to: does it cost the lowest amount to produce? So there, it's a narrower set of criteria that define why we select one bid over another. Depending on what we're purchasing, it may make more sense to use one or the other. If we're buying copy paper, we use the LPTA approach, as directed in the FAR just focusing on cost. When buying information technology, given various factors, you are to pursue the best value approach.

Often, what seems to be missing in the process is: does the product ultimately fulfill the mission requirements of the agency that's purchasing it? It's important to follow the rules while also delivering what is needed when it's needed, and

ultimately ensuring that the purchase enables an agency to meet its mission more effectively.

Procuring Complex Products

Complex exchanges are characterized by two conditions: uncertainty about the product's cost and how it will perform, and specialized investments that lock in the buyer and seller. The purpose of a contract is to promote a win-win exchange by preventing the buyer and seller from doing things that would lead to win-lose or lose-lose outcomes.

Contracts for complex products transform a market exchange into an interdependent relationship. The combination of an incomplete contract, uncertainty about the product and its costs, and the need for specialized investments sets up a potentially precarious relationship. Focusing on rules that structure and relationships that define can ameliorate the conditions that mark these complex exchanges.

Overview of U.S. Coast Guard's Deepwater Program

The U.S. Coast Guard has a complicated set of missions. By many accounts, the Coast Guard is the standard-bearer for “do more with less.” It is resourceful, mission-driven, action-oriented, and inventive. The combination of limited fleet resources, mission focus, and a bias for action compels the

Coast Guard to ride its assets hard. By the 1990s, its fleet and assets showed that wear. Admiral Jim Loy, the commandant in the mid-90s, began thinking strategically about how to upgrade, modernize, and integrate a system of assets.

The Coast Guard's Deepwater program is a story of how a federal agency responded to an opportunity to upgrade its decaying capital stock—its fleet of air and sea assets—by leveraging political interest in harnessing private-sector approaches to public problems. It embraced a system-of-systems contracting strategy in which a single lead systems integrator (LSI) would design the fleet as a whole (e.g., how many of the different types of ships and aircraft would be in it), detail the performance specifications of each (e.g., how fast and far they would go), supply the communications structure to tie them all together, and then manage the contract process for buying them.

Part of the reason the Coast Guard opted for an LSI to perform contract management was because it lacked the capacity itself. The Deepwater program involved a high degree of uncertainty about the system's components, specifications, and costs. Specialized investments were required to produce and deliver the system. Given these characteristics, it is an excellent illustration of a complex acquisition.

We wanted to understand the Deepwater case better, draw out lessons. It was a great journey of inquisitiveness into something that on its face looked simply like a failed procurement, but was much more. There were innovations in contract design, procurement processes, and supplier relations. Some aspects did not work ... the reasons for that are discussed in detail in our reports and our book. To that end, we owe the IBM Center nothing but thanks for its support of our original research in this area. Our two reports for the Center set the foundation for our book, *Complex Contracting: Government Purchasing in the Wake of the US Coast Guard's Deepwater Program*.

The Three Phases of the ICGS–Deepwater Relationship

The Coast Guard envisioned the multi-decade, multi-billion dollar Deepwater program as the solution to its decaying fleet of air and sea assets and inadequate command and communications systems. By pitching a novel procurement approach—the use of a private LSI to design, purchase, build, and integrate a system-of-systems—the Coast Guard secured authorization and funding. In selecting the *Integrated Coast Guard Systems*, a partnership of two leading defense



contractors, to serve as the LSI, the Coast Guard hoped to tap the expertise and experience of two of the world’s preeminent defense contractors. The result would be sparkling new boats, planes, helicopters, and information technology that would dramatically enhance the Coast Guard’s ability to perform their wide-ranging missions.

In reality, the ICGS–Deepwater relationship moved through three phases. In the first phase, the “honeymoon,” the Coast Guard and ICGS embraced each other as partners. Each party took meaningful steps to make the partnership work, sometimes at a sacrifice to their own, immediate interest.

In the second phase, as the volume of contract and production activity accelerated, things became foggier. The Coast Guard and ICGS each did things during this period that appeared consummate, but at other times did things that the other party could interpret as perfunctory.

Finally, in the third phase—the divorce—the fog cleared for both sides. The challenges of trying to determine if the other party was behaving consummately or perfunctorily were too great, and the likelihood of receiving consummate behavior in return was diminishing. Both the Coast Guard and ICGS decided to cut their losses and look out for their own interests, both short and long term. This proved insufficient to cement the partnership and change the relationship from a tragedy of failed collective action to a cooperative success.

A Series of Missteps: the Unraveling of the Deepwater Program

Success hinged on the Coast Guard and ICGS managing Deepwater’s complexity: crafting rules to incentivize consummate behavior in numerous areas where the contract could not detail product specifications, and structuring a relationship so the shadow of the future created incentives for win-win cooperation. Success would require the Coast Guard to communicate its needs, ICGS to present product options to meet those needs, and both to jointly make decisions and shoulder costs in the contract’s cooperative spirit. If all went well, a win-win outcome would result: the Coast Guard would receive an affordable product that enhanced its ability to perform its mission. ICGS would receive compensation above its costs and the prospect of future business.

A series of early missteps had cascading consequences that brought down the once promising partnership. Two central governance rules were improperly designed and implemented and failed to establish the incentives to contribute to



the contract’s goals. The IPTs (integrated project teams) got underway without clear rules for decision authority and cost responsibility.

The performance incentive system was likewise ambiguous since Deepwater’s assets—the desired outputs of the program—would not be completed until years later. Absent the guidance of clear rules, each side struggled to determine if the other’s behavior was in the partnership’s cooperative spirit.

Lessons Learned from the Deepwater Program

There have historically been two approaches to acquiring complex products: rule-driven and relationship-driven. The former focuses almost exclusively on following the rules while the latter relaxes the rules while building trust among the parties.

Some look at Deepwater as an example of too much focus on the relationship. Our view is, we have to have rules that promote cooperation. You can’t write everything down at the outset, but you can put in certain governance rules that promote cooperation of all parties in gray areas.

Second, you need to structure a relationship that creates opportunities for trust and cooperation building over time. When faced with a choice, you're going to preserve the relationship rather than choose a short-term, personal benefit. We lay out in our book a series of criteria for good rules that promote cooperation and good relationships that enhance that cooperation.

The third part is creating the conditions under which both parties ... build a mutual understanding of what it means to be cooperative. If I receive something that doesn't meet expectations, there are agreed-upon, established processes and mechanisms that allow us to remedy the situation.

Our book guides the reader through this general framework of crafting the right rules, setting up the right relationships, and building that mutual understanding that can only be born over time.

There was much discussion about banning the use of lead system integrating in the wake of Deepwater. That's foolish. You need a general contractor. A great example of this is the Healthcare.gov website. A principal failure is the absence of an LSI. Not one of those 55 vendors was specified as the one who was going to have to put all of that stuff together. The presumption of all the vendors was that's the Department of Health and Human Services' job ... but they don't have the capacity to perform the integration functions. Maybe in the future we'll live in a world where the federal government will build that capacity, the systems integrators and the program managers ... [until then], agencies are going to have to buy it.

We highlight the Nimitz-class aircraft carriers as a successful procurement of a complex product. Here you have a very challenging market situation in which there is only one purchaser and a single provider. This has been a very successful long-term relationship between the buyer and the vendor. A tremendous effort has gone into identifying the rules right, setting up contractual vehicles that promote cooperative relationships, entering into a relationship, and building that relationship.

Prospects for Successful Complex Contracting

Complex contracts can be successful (Nimitz) or they can fail (Deepwater). Our aim is to offer a theory for how to improve the prospects for successful complex contracting. Our analysis of what worked and what did not in Deepwater suggests some guidance for the practice of complex contracting. You can find a fuller description of these insights in our book,

Complex Contracting: Government Purchasing in the Wake of the US Coast Guard's Deepwater Program.

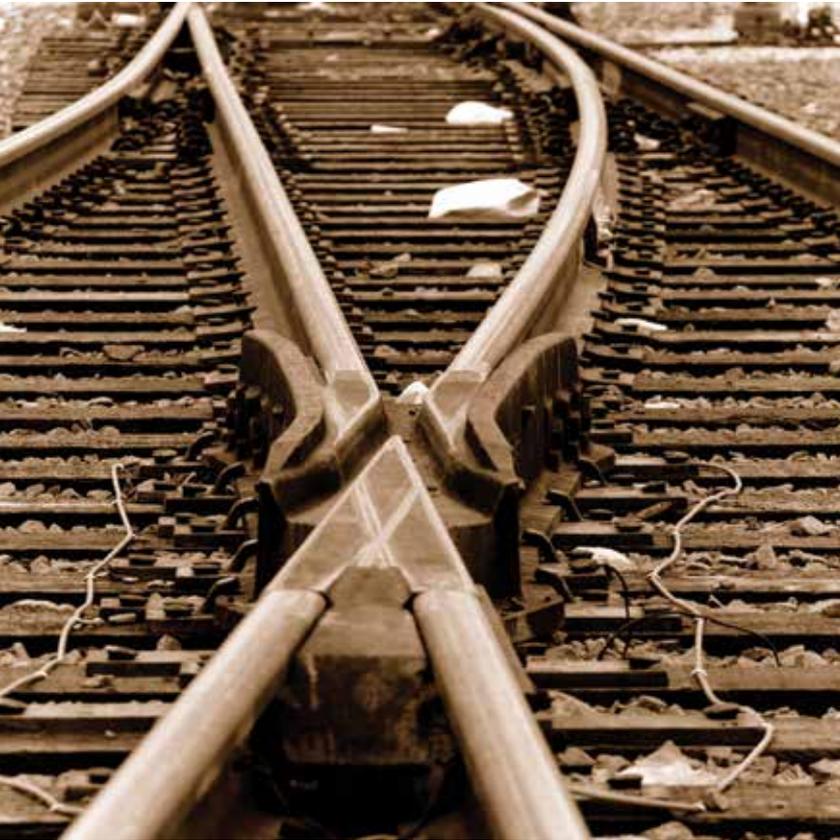
System-of-systems acquisitions are not doomed to fail

The Deepwater contract did not fail to achieve the win-win because the Coast Guard sought to buy its assets through a system-of-systems program. Federal government agencies regularly purchase products made up of integrated and technically sophisticated components. The challenges of complex contracting arise when either the finished product or its component parts are difficult to write down contractually and require specialized investments. System-of-systems and complex products are not necessarily synonymous.

Lead systems integrators do not doom complex contracts

The Deepwater program did not fail because it relied on an LSI. Just as government agencies buy system-of-systems products all the time, they also use LSIs to do the work of acquiring and integrating system components. The challenge in working with an LSI to procure a complex product is to find ways to facilitate cooperation where the contract's terms fail to fully define and incentivize the parameters of a win-win outcome. For Deepwater, the root of the problem was not the reliance on an LSI, but a contract that was ill-suited to the complexity of what the Coast Guard was buying. The Coast Guard and ICGS struggled to quickly establish governance rules like the integrated project teams.





Well-functioning IPTs, with clear distributions of decision authority and cost responsibility, would have helped avoid much of the confusion about which side was responsible for making decisions.

Successful procurements for complex products require user and producer input

Buyers and sellers of complex products need information. Two types of information are particularly critical in complex contracting: what will product users do with the product, and what steps do product manufacturers need to take to construct the product. One of the principal goals of an IPT is to bring together the two groups of people (users or buyers; makers or sellers) to produce this information. Deepwater's IPTs suffered from insufficient involvement of both Coast Guard users and manufacturers from IPTs in the decision-making process for many complex contracts components.

Contracts for complex products require internal contract management capacity

Just as successful procurements for complex products require the active participation of users and manufacturers, they also require enough highly trained contract professionals to fully manage the process. Contract managers have principal responsibility for translating what the buyer wants into contract terms to convey to the seller, and then ensuring the seller delivers. Contract management capacity stems in part from the contract managers' experience and expertise—their knowledge of the product and the steps they can take within the boundaries framed by public laws like the FAR. Capacity is also in part a result of the sheer number and continuity of contract managers on a particular procurement.

The Deepwater program was plagued by insufficient contract management capacity within the Coast Guard and ICGS. Contract managers on both sides rotated in and out of assignments, exacerbating the lack of clarity about decision-making processes within the IPTs and undermining the relationship building needed to foster a virtuous cycle of reciprocal cooperation. For example, in 2004 the GAO estimated that one-fifth of the acquisition positions needed to staff the Deepwater program were unfilled.

The building acquisition workforce has to be a priority. "Insourcing" (or the use of government personnel to perform functions that contractors have performed on behalf of federal agencies) may be a priority with the current administration, but even there resources need to be made available for training, development, and capacity building. You need to have the people in house who are competent and able to do it. ■

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