Modular Contracts

Reduce risk by partitioning contract tasks over time and components



Problem: Numerous layers of contract incentives and management controls, designed for major hardware efforts, create high transaction costs to modular contracting

Recommendation: On-board with a BAA/CSO solicitation, transition to multiple-award IDIQ using six-month FFP tasks (There are several approaches to effective modular contract structures, this is one)

Implementation Details:

- BAA/CSO Funnel: white paper, oral presentation, proposal, BPA/BOA award
- Next, multiple awards to FAR 16.5 IDIQ
- Defined on-ramp/off-ramp period
- FFP to avoid compliance regulations
- Six-month PoPs, base + four options
- Repeated orders with two-step process

Other Approaches:

- Quick starts: OTA, 2373, or SBIR
- Simplified: BPA or BOA
- SW factories: FFP/LOE, FSS, T&M by talent area
- "As a service": Consumption-Based Solutions
- Traditional vendors: CPFF/LOE

Success: Outcomes from one phase provides inputs to the next, and contractors do not feel like they are in proposal-mode all the time

Resources: US Digital Services Playbook; DHS PIL Bootcamp; DAU Contracting Cone

Context & Motivation

Back in the 1950s and 1960s, management experts started deploying two general methods for improving federal contracts where the guiding hand of the market was absent. First was the use of incentives, such as providing award fees or sharing in the profit/loss. Second was participation in the contractor's internal controls, exemplified by the Program Evaluation Review Technique (now called Earned Value Management).

RAND analyst Oliver Williamson complained in 1965 how the management experts did not even "consider task definition as a means of influencing contract behavior." He continued,

> "… neither the manipulation of profit incentives nor the monitoring of contract progress can be expected, in any dependable sense, to yield significant improvements in contract performance as long as the specification of the task remains unchanged. From a contractual point of view at least, the 'systems approach' to weapons procurement which has prevailed since 1953 appears to be distinctly suboptimal."

He advocated partitioning program tasks into smaller efforts, which indeed had been the norm for the Army and Navy. Williamson went on to be a founder of the transaction cost theory of economics and won a Nobel prize for it in 2009. Along with Armen Alchian, Burton Klein, and William Meckling, the early transaction costs economists got their start examining systems acquisition at RAND. Yet their advice was largely ignored by the Department of Defense, which adopted the long-duration "total responsibility" concept found in the Total Package Procurement and Total Systems Performance Responsibility.

The first TPP contract for the C-5A led to a bailout of the contractor after high cost growth

and performance shortfalls. A congressional report determined that "Total-package and other large contracts should be broken down into smaller, more manageable segments."

In 1996, Congress put modularity into law for information technology programs. Title 41 US Code §2308 states, "To the maximum extent practicable, the head of an executive agency should use modular contracting for an acquisition of a major system of information technology." This is reflected in FAR 39.103, making modular contracting the preferred approach for digital products.

Modular contracting is a companion concept to the previous play on agile work statements. When technical direction is separated from work statements, accountability for performance is no longer built into the contract. Modularization and shorter periods of performance creates an incentive for the contractor to continuously deliver or risk being replaced. Williamson noted advantages in modular contracts in 1968:

1. It reduces the amount of uncertainty and hence increases objectivity in contract negotiations, reduces the felt need for defensibility in administering contracts, and permits more reliable evaluations which in turn allow cost-performance reputation effects to be assigned with confidence. Each of these effects should help to prevent excessive contract costs.
2. It creates a contract environment in which the full potential of parallel R-and-D approaches can be exploited.
3. It complements R-and-D strategies which emphasize the need for maintaining options by providing support for work on adaptable components and flexible capabilities.
4. It permits greater competition by increasing the number of eligible contractors.
5. It lends itself to sales and employment stabilization.

Unfortunately, many in the acquisition community believe modular contracts induce greater risk. An integrated master schedule (IMS) outlining all important tasks from beginning to end provides something to measure against. While an IMS gives the appearance of risk reduction, an analysis shows that many IMSs actually hide task performance until 60 or 70 percent complete when major rework and delays are recognized. The FAR clearly states that modular contracts "reduce program risk." This is because of early and continuous feedback on product.

Another major concern is that modular contracts increase transaction costs rather than reduce them. For example, the procurement administrative lead time (PALT) in the Army was 180 days on average for a contract of $1 million or more and the figure grows to 600 days for $50 million or more. Turning a single $50 million contract (600 days) into fifty separate $1 million contracts (50 x 180 days) could increase administrative work by 15-fold!

While the FAR 39.103 advises for a PALT of 180 days or less, in most cases modular contracts can be awarded in less than two weeks. This is made possible by the lightweight structure of the agile work statement. It has been accomplished by several program offices By cutting modular contract PALT from 180 days to 14 days, the work required for fifty $1 million contracts is made comparable with a single $50 million contract.

Many practitioners did not feel that modular contracting lowered transaction costs in their experience. In most cases, workload increased. Yet they often felt it was still the right thing to do. Programs that had adequate government staff and a few years under their belt were more likely to have a repeatable process.

Modular Contracting Tools. Modular contracting can be achieved using a number of tools in the contracting cone. One path recommended in this playbook is to use a Broad Agency Announcement (BAA) or a Commercial Solutions Opening (CSO) to receive proposals on a broadly stated topic. These solicitations can stay open for long periods of time, use written proposals or oral presentations, result in one or many awards, and allow for quick, merit-based

selections. Simplified acquisition procedures are often paired best for this stage, such as a blanket purchase agreement (BPA) or purchase orders on a basic ordering agreement (BOA).

Promising firms can then compete for bigger opportunities by being added to a multiple-award Indefinite-Delivery, Indefinite-Quantity (IDIQ) contract during an on-ramp period. Roughly 40 percent of all defense contracts use IDIQs, and the GAO recently found only one-quarter used multiple awards. FAR 16.5, however, prefers multiple-award IDIQs which creates fair opportunity and relieves some administrative burden. For example, FAR 15.3 source selection and FAR 6 competition requirements do not apply. This allows multiple-award IDIQs to use the full range of best practices in DHS PIL Bootcamp including oral presentations, confidence ratings, and comparative evaluations. These best practices are also available to federal supply schedules (FAR 8.4) and simplified acquisition (FAR 13).

FAR 16.505(b)(ii) allows the contracting officer to "exercise broad discretion" and "keep submission requirements to a minimum" using "streamlined procedures." It is also the only contract type in the FAR that explicitly advises consideration of FAR 39.103 modular contracting. These advantages make IDIQs a good choice for allowing contractors to compete for larger firm-fixed price contract tasks. Firm-fixed price is preferred, especially when dealing with non-traditional contractors, because it is exempted from the six business system requirements described in DFARS 242-70. Moreover, tasks should be structured in a way that supports incremental accomplishment, such as one base award and four options of six-months each. This approach can also be paired with FAR 14.5 two-step sealed bidding if time allows.

While this process is used by some program offices, there's never a one-size-fits-all approach. Many other contracting tools can be used, as is often repeated in our interaction with acquisition practitioners. What they share is the outcome that the contractors do not feel like they are constantly preparing proposals. Rather, past performance should directly feed each subsequent phase.

The approach to modular contracting should be added to the acquisition strategy to make sure there is alignment over time. Rotating acquisition and contracting officials can lead to a loss of knowledge, creating a reversion to traditional methods. A **strategy for modular contracting** should describe how contract types fit with the situation. Considerations for the strategy include:

- **Product line:** Based on the standards for interfaces and data exchange, what parts of the system are contractually severable? Sensors, compute, and data services often are. Software intensive elements should be given preference for modular contracting.
- **Life cycle:** For market research activities and experimentation using BAAs or CSOs, maximize use of simplified acquisition vehicles. For prototyping work, Other Transactions Authority are useful and can transition into production if planned for. Engineering and Manufacturing Develop- ment might be done on FAR-based IDIQs. Continuous upgrade efforts can benefit from sole source negotiations. Production and sustainment contracts, however, may avoid modularity and consider financing options when appropriate.
- **Vendor pool:** If nontraditionals may be competing, strong preference for FFP or OTAs should be provided to avoid numerous business requirements. Nontraditionals may benefit from single-award IDIQs because they can be treated as commercial items (DFARS 212.201). If traditional primes are the likely competitors, then cost reimbursable contracts may have advantages.
- **Integrator:** Modularity is preferred when government has more technical expertise to oversee contractor-led effort. When government is the integrator and uses development services, such as at a software factory, there are often advantages to using federal supply schedules or fixed price level of effort contracts. When government does not have the staff to monitor the contractor, large traditional contracts make sense.

- **As a service:** Whenever possible, buy operational capability using consumption-based solutions. These will often be digital services like cloud computing but can apply to many situations with a metered price like transportation, space-based sensing, counter-UAV, and more.

Reviews. Just like agile work statements require continuous collaboration between supplier and customer, so does modular contracting. Many major programs have quarterly integrated program reviews with the contractor, which itself can seem like a lot when the contract spans several years. Yet these infrequent checkups often make the customer and their stakeholders suspicious that they are getting taken advantage of. When progress meetings are more frequent, everyone is on the same page and feels invested in the solution which lowers tensions.

> **"Applying industrial era principles to digital era technologies is a recipe for failure."**
>
> RADM Lorin Selby
> Chief of Naval Research

Functionals should review the work of their counterparts at the contractors at the end of sprints. The participants should be the "doers" rather than higher level management or business development. Users can be brought in as much as practicable for their feedback on functionality. Their buy-in will be crucial for successful transition and fielding. These frequent reviews should not be run in the traditional manner with slide preparation and risk matrices. Functionality should be the primary thing contractors have to prepare, making the interaction lightweight but informative. Major reviews every six months or year can then be used with the full program team. These may look like more traditional reviews. There should be no surprises at these meetings, and they should be tied to contract options.

Grow Organic Capabilities. A good way to build up government technical expertise is to bring on advisory and assistance services to support technical direction. Rules for these contracts are found in FAR 37.201 while FAR 9.5 describes the rules for conflict of interest. Advisory and assistance services can be bought from a vendor, FFRDC, university, or consultancy. The purpose is not to offload technical work to the service providers, but rather to have them work hand-in-hand with government staff to grow in-house capabilities—think of an apprenticeship model.

A major consideration should be defining exit criteria. Technical services should probably not extend past two years or the government may become reliant. The support is most crucial in the early phases as the program navigates towards a technical baseline. When competition gets narrowed down and intellectual property gets hammered out, the services contract can finish.

Wrap Up. The FAR prefers modular contracting when it comes to information technology because it reduces risk and incentivizes contractor performance. When paired with agile work statements, government can take full advantage of commercial development practices. Creating a modular contracting strategy can help the formulation of a repeatable process. One common strategy is to use a multiple-award IDIQ with six-month fixed price tasks. The preference for contract types may change depending on where the program is in the lifecycle, participation of nontraditionals, and other factors. These choices should be outlined at a high level in the modular contracting strategy. Performance at major reviews should be directly tied to options and influence future awards. Using advisory and assistance services contracts to help build technical acumen in the government staff is a best practice, but exit criteria should be defined early.