Delivering Training as a Service, Acquisition Benefits and Lessons Learned

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Abstract — Traditionally government organizations purchase simulators and training content to support training requirements. However, buying training as a service (TaaS) is prevalent in the commercial market. The United States Department of Defense has been moving toward increased use of services contracting in a number of business areas to include training. This paper captures lessons learned specific to the use of services contracting to buy TaaS. The paper is based on an acquisition strategy framework and the supporting business case analysis. Benefits include high quality training, reduced procurement and lead time, lower cost within budget cycles and responsiveness to changing requirements. Risks include constructing an acceptable acquisition strategy (e.g. defining "what" is being bought, total life cycle cost, legal risks, data rights determination). TaaS is a viable and effective acquisition strategy given equitable risk sharing and a thorough understanding of the business and regulatory issues.

Introduction

TaaS, as used in this paper, is "turn-key" training capability where the service provider vertically integrates all aspects of the training needed to satisfy a training outcome. Defense organizations traditionally purchase simulators and training content to support training requirements. However, buying TaaS is prevalent in the commercial market. Over fifty percent of the United States Department of Defense budget supports services contracting in a variety of business areas to include training. This paper captures lessons learned specific to the use of services contracting to buy TaaS using an acquisition strategy framework and the supporting business case analysis supporting the training solution.

Background

TaaS has been used as an acquisition strategy for many years. However, the regulatory and statutory issues become very complex because a service is being procured potentially with significant contractor financial investment resulting is a lack of long term effective competition. As with any approach to meeting demanding requirements, lessons can be learned through difficult experiences in past procurements.

TaaS differs from services contracting because the product is a trained student or outcome to a defined standard requiring material investment to support the training (e.g. devices, classroom, training aids, courseware). Training programs routinely rely heavily on performance based services contracting to support training requirements, for example contractor personnel to perform operations and maintenance, contract instructors and courseware development. However, these examples of service contracts supporting training do not meet the TaaS definition used in this paper because the government is responsible for the vertical integration of the training capability.

When a service is being procured directly supporting fleet requirements, the funding type required is normally Operations and Maintenance (O&M). Purchasing training equipment and courseware requires procurement funds (e.g. APN, OPN). The regulatory and statutory requirements for financial management of these different types of appropriations are very interdependent with the benefits and risks of buying TaaS.

Benefits

The primary benefit of TaaS is the simplicity of efficiencies of outsourcing the vertical integration while using existing service O&M funding. Benefits of TaaS include high quality training, reduced procurement and fielding time, lower cost within a budget cycle and responsiveness to changing requirements. O&M funds are appropriated yearly, the lead time to begin acquisition can be reduced by several years compared to procurement funded programs, particularly if they are "new starts" as defined by policy. For routine and inexpensive changes, the contractor can modify devices and courseware for better concurrency (government approval and funding processes are not required). This benefits fleet users because the training remains relevant to evolving and changing requirements. Service contracts have the flexibility to meet changing requirements quickly.

TaaS Use Cases

To simplify the discussion, TaaS will be divided into two use cases, one simple and the second complex. However, specific programs may fall between these two extremes.

The simple use case is buying commercial TaaS capabilities. These services are procured under commercial processes. Pricing is based on commercial rates in a competitive market which further support innovation and quality improvements. Training classes are based on defined standards (e.g. government certifications, industry standards) and ordered "as needed". Effective competition exists for a new contract at any time. In the event the government TaaS requirement no longer exists, the commercial market sustains the capability. Drawbacks include the potential for the Government to "compete" for high demand training and the long term availability if the commercial training demand no longer exists. Examples of this use case include, but are not limited to, procuring commercial aircraft flight training using FAA certified flight and maintenance schools, certified network administrator certifications and trade schools. These are common procurements buying TaaS. These are normally low risk procurements for the government and industry partners.

The complex use case is leveraging commercial TaaS capabilities for dedicated government use at the government point of need. Consider the use case when procuring dedicated military capabilities exclusively under one contract. The contractor is required to invest in material (e.g. devices, courseware, infrastructure) upfront and recover the cost by amortization over the service contract period of performance. Examples of this use case include, but not limited to, commercial derivative aircraft flight training at military bases and accession training classes. This use case of TaaS is less common and can pose very difficult acquisition issues that must be considered in the acquisition strategy as discussed below. These procurements can pose risk for both the government and industry partners.

Lessons Learned and Risks

The following lessons learned are intended as a starting point for the critical discussions necessary to plan, obtain approval and contract for a TaaS project. Given every procurement is unique, these lessons learned will not cover all possible aspects of planning needed for success.

Regulatory and statutory limitations must be understood. The most common regulatory issues for TaaS efforts result from the use of O&M funding in a service contract environment. The result may be a base contract with yearly options or alternatively a pre-priced requirements contract could be used. Also, service contracts normally have a five-year period of performance (up to ten years, with appropriate approvals). The ability to exceed ten years becomes very difficult. The five-year period of performance is not an issue for a simple use case. However, for a complex use case, the period of performance shifts considerable risk to the contractor given the government can choose not to award the yearly options unilaterally while the contractor must procure required material upfront and amortize the cost of the expected period of performance of the contract. Another common issue involves the regulatory issues concerning leases. Because equipment is needed in performance of a TaaS contract, the contract could be considered a lease based on restrictive regulatory guidance. This is a very complex discussion dealing with capital vs operating leases, residual value, contingent liability, ownership transference restrictions and preponderance of the contract value. This area is a major risk to gaining approval for a TaaS when there is significant contractor investment. Many regulatory and statutory issues are unique to specific TaaS projects; however, these issues are a significant risk to obtaining approval to proceed with the contracting process. For example, military flight simulator services specifically required unique approvals under Federal Acquisition Regulations (237.102-71 Limitation on service contracts for military flight simulators).

Roles of the user and service provider must be defined. In a TaaS project, the user defines the requirements and provides funding. The service provider is responsible for the training. However, critical roles and responsibilities must be defined to avoid transfer of inherently governmental functions to the TaaS provider. At the highest level, responsibility for the training syllabus and appropriate media selection for learning objectives can be a difficult barrier. TaaS providers, and in some cases government resource sponsors, typically want the most flexibility over the syllabus and curriculum in order to optimize cost. However, fleet users can be very reluctant to delegate this responsibility due to interdependencies with other training and long term career field management concerns. From a contracting perspective, a mature syllabus and defined media requirements (e.g. 5 Level 7 and 4 Level 6 FAA certified devices with 18 hours of Level III courseware) can be well defined in contract documents and evaluation criteria. However, the greater the ability of the TaaS provider to customize the training solution results in a more complex best value determination in a competitive procurement process. However, flexibility may result in an overall better value at the TaaS program level.

It is critical to clearly define in a TaaS contract "what is being bought" and "how is value and success measured." Clarity is required to write required contractual documents, request for proposals, source selection evaluation plans and quality assurance plans for post award. Buying a "trained student" or "outcome" is commonly discussed when considering TaaS. However, awarding a contract and performing contract surveillance requires more detailed information. A contract can be structured around a trained student completing a set curriculum (similar to commercial flight schools) or training availability (e.g. defined capacity with training available 16 hours per day, 6 days per week). Buying classes potentially results in unused training device capacity. Buying availability creates issues with ensuring high utilization rates to avoid paying for excess capacity. Either approach will work, specific requirements and project risks should determine the best strategy. Consideration of contract transitions must be defined. This not only includes from contract award to a full training capability but also an exit strategy if the requirement ends or to maintain effective competition at the end of the period of performance. For simple use cases the plan can be as simple as buying commercial capabilities (i.e. a commercial type rating in a 737 aircraft with follow-up quality assurance surveys). However, this plan can become very difficult for complex use cases. With no commercial equivalent capability, being dependant on government facilities and significant contractor investment in long lead time devices both the government and the service provider begin to accept increasing risk exposure.

The business case analysis (BCA) must address the life cycle cost and risks. The BCA fundamentally explains what is being procured, what is the expected cost, why the cost is reasonable with documented assumptions. For this paper, how to perform a BCA is not the issue to be addressed. The challenge is to use the BCA to facilitate the critical thinking needed to evaluate the use of TaaS as a viable business solution. For simple use cases the BCA

is very clear. When a commercial service capability exists and the student throughput does not justify developing an organic capability, then a TaaS approach is normally selected because it is operationally acceptable and the lowest cost approach for both the short and long term. For complex use cases, the BCA can become the most difficult challenge in gaining approval for TaaS project. Assuming the elements of cost are known, the cost of buying the capability through a procurement program or a TaaS project forms the foundation of the BCA. For example, a TaaS effort normally will consist of manpower (e.g. instructors,), material and operating cost (e.g. training devices, courseware, training aids) and infrastructure (e.g. buildings, networks). Typically, the basic elements of cost are the same for government and industry. The differences in "make or buy" analysis becomes the distribution of the cost (amortization), business assumptions and the risk transference. It is an important issue to understand the business aspects regarding assertions of significant cost advantages, schedule benefits and quality improvements. For example, manning efficiencies and assumptions on devices (numbers and fidelity) result in very different cost estimates. In addition, the BCA can help in programmatic planning. For example, if TaaS is proposed for flight training services, then a 7 to 10 year period of performance may match customary technology refresh cycles resulting in a natural break point to maintain effective competition. One difficult issue is the impact on TaaS considering the total length of time the services may be needed compared to the amortization period. For example, for many military applications twenty-five years is a realistic period for a life cycle cost analysis. With TaaS, the service provider amortizes the capital cost over a number of years. After the amortization period is over, the cost of continuing the service rarely decreases. As an example, a TaaS contract for 10 years may have a lower cost during the first 5-years (the budget period), break even after seven to ten years. However, the total cost of the TaaS may be twice the procurement cost if the service is continued over 15 years as a result of a follow-on contract to meet training requirements.

Concurrency upgrade and requirement changes can greatly increase training cost over the life of a TaaS project. Concurrency needs known at contract award can be included in the price and this is commonly briefed as a benefit for TaaS procurements (improved concurrency). After contract award, requirement and concurrency changes can be difficult. Because the funding is O&M used on a severable services contract, the most practical approach is to change the training requirement and increasing the price over the remaining contract period of performance. Attempting to fund contractor owned device upgrades is very difficult. For example, using procurement funds to change contractor equipment is normally prohibited. Using O&M funds for hardware modifications on a services contract is normally prohibited. Funding a contract line item for concurrency upgrades as a generic requirement is difficult because of the inability to define the work scope in advance of funding. Over the life of a contract, the cumulative increases in training cost can be significant because the amortization is spread over the remaining contract period of performance. Toward the end of the contract period of performance, the price increases may be prohibitive due to the shorter cost recovery period.

Data Rights should be considered. In the past, finishing a TaaS training event resulted in certificate of completion, licence or rating of some type. However, in the digital age with learning management systems and career-long learning, we now need to consider human performance data and interfacing service provider information technology systems with government information technology systems for interoperability purposes. Cyber and information protection requirements should be considered for TaaS procurements given increasing interdependencies of training systems, learning management systems and desire for human performance data.

Conclusion

Training as a Service is a viable and effective acquisition strategy given equitable risk sharing and a thorough understanding of the business and regulatory issues. TaaS can be routine and low risk. However, as the TaaS model is extended to more complex use cases, the regulatory and statutory issues become complex quickly. One must not rely on short-term gain, but rather consider the overarching lifecycle strategy to ensure long term best value. Understanding these issues is critical in developing sound acquisition strategies and successful industry collaboration. Even for very complex use cases, if TaaS is the "right" solution, then it should be evaluated as a valid acquisition strategy. The lessons learned covered in this paper provide a starting point and hopefully improves government and industry collaboration into fielding successful TaaS projects.

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