Evaluating Price; Other Transactions (OTs)

Purpose: The 2018 DOD Other Transaction Authority (OTA) Guidebook states: "The Government team shall determine price reasonableness. The Government team may need data to establish price reasonableness, including commercial pricing data, market data, parametric data, or cost information. However, the AO should exhaust other means to establish price reasonableness before resorting to requesting cost information." This document is simply an informational list of elements to consider when evaluating price in an OT.

Disclaimer: This document does not constitute Agency, Department, or U.S. government policy, instruction or regulation. This document will not bind a Contracting Officer or Agreement Officer (KO/AO) into a price determination.

Collaboration: This document is a collaboration of practitioners, and feedback is continually welcomed using the update form here.

This document is divided into three sections:

- Price Forces – Economic Forces at play within the OT environment
- Price Considerations – How to evaluate price
- Alternative Resources – DoD & external resources

Price Forces

Inherent Competition-Driven Forces: The vast majority of OT awards are done with multiple offerors proposing solutions. Offerors with the most advantageous solutions are typically selected for negotiation. Despite varying solutions and prices amongst competitors, the KO/AO can *usually* place weight in the notion that the proposals were submitted with an expectation of competition between offerors. As a result, there are competitive forces which inherently push offerors to submit *competition-driven pricing*. Despite market forces pushing offerors to submit initial competition-driven pricing, this does not deter the KO/AO from continuing price negations once the most advantageous solution is selected to ensure a reasonable price is achieved.

Easy Example: Need a prototype effort to assist with US manufactured unmanned Aircraft System (UAS) technologies. Specifically, looking for software solutions to support swarm and identification awareness technology.

- Company A proposes a home-grown software solution allowing UAS to detect each other using infrared technology for a price of $2.3M
- Company B proposes a modified existing software product that uses a unique improvement on Bluetooth for a price of $1.2M

The proposed solutions are different, and will be evaluated for the best technical approach. If both companies assume that competitive solutions will be offered, there is an inherent economic force driving them to propose a competitive price.

Perception of Budget Fulfillment:

Price Forces: Many OTs include a budget constraint, Not to Exceed (NTE) ceiling or even anticipated funding levels. KO/AOs should be cognizant that this could potentially be an opposing force that could influence offerors behavior. Offerors may feel obligated or persuaded to submit a price at or just below the budget constraint despite providing a solution which usually would be proposed at a much lower price.

Easy Example: My problem set is that I need secure internet for a temporary office in a contingency environment. I tell the offerors that I have a $200k budget. Offeror 1 has a prototype of a technology which provides access to Wi-Fi signals in a larger-than-required facility space. The offeror has traditionally sold this type of solution for around $100k. Offeror 1 may be incentivized to bid closer to the pre-designated published budget ($200k) after receiving this information.

Price Considerations

What are the Alternatives?

Consideration: When deciding what a fair price is, it is important to think about the alternatives. Below is a series of questions that the KO/AO should consider when evaluating price before entering negotiation.

- What is the potential loss of value/cost impact if no award is made?
- How does the price/value ratio compare to the other proposed technical solutions?
    - Is the price-delta explained by the technical delta? (See Price related to value below for additional insight into value analysis)
- Specific to the selected technology, what is the most-similar-to technology with pricing information available?
    - Is the price-delta of the proposed solution explained by the technical delta?
    - Understand that the level of similarity is less important than the *Price-Walk*
        - *Price-Walk* is the exercise of evaluating 2 items/technologies, comparing and contrasting them technically, and then pricing the technical differences. Don't settle for "the solutions are not comparable." For example, a car is not very similar to a motorcycle, but you can identify technical differences which explain why most cars are more expensive than most motorcycles? That exercise is the *Price-Walk.*

Price related to Value

Consideration: Acquisition strategies should balance Innovation and Budget: "Design-to-price" was a distinct departure from traditional acquisition programs, which typically focus on achieving the highest possible performance, which can result in cost increases. We want to focus on choosing the most ADVANTAGEOUS solution; which *should* include price as a distinguishing factor. When choosing other-than-the-lowest-priced technical solution, the KO/AO should follow a similar thought process to that of a best-value FAR based contract. The AO should be able to explain why the solution or function exceeds the others, and the increased value to the warfighter is worth the additional dollars. Consider the following Price/Value equation as a simplistic way to think about value.

Price/Value Formula:	**Example:**	
Value Rating Chosen Solution (1-10) Value Rating Next-Best Solution (1-10) *Compared to:* Price of the selected Solution Price of the Next-best Solution	8 5	$150,000 $75,000

- The above situation shows that I subjectively applied an 8/10 value rating to the solution selected for award. I am also applying a 5/10 value to the next-best solution for award. The math (8/5) is a 1.6 mark up from the next best solution, to the selected solution.
- The $150k price tag of the selected solution divided by the Next-Best solution is a 2x mark up.
- Force yourself to think about the above illustration using this sentence: "I am paying 2x the price for something I consider to be 1.6x better."

Total-Cost-Acquisition:

Lifecycle Consideration: Choosing a technical solution should not only consider the current proposal costs, but the potential follow-on production and sustainment costs; as well as how these costs correlate to the value they provide. Consideration should be given to life-long acquisition and sustainment expenses. Factors to consider include the possible impact of only selecting one source creating a sole-source environment, and potential issues that may arise from follow-on efforts with limited or restricted data rights.

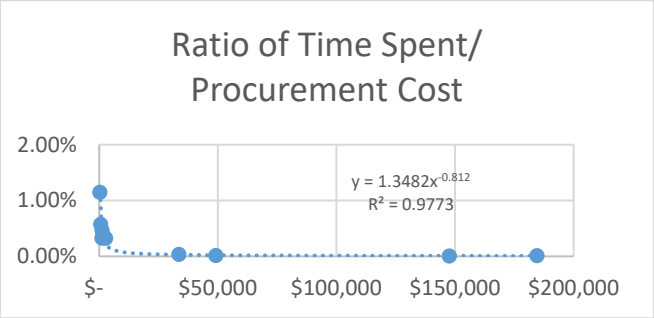
Time/Value Consideration: How much time should you spend reviewing the price/value of a proposal? In establishing a process for reviewing the proposed price, the reviewer should

consider the amount of effort associated with that review. For example, a program office of 10 individuals reviewing a proposal over a 2 month period may cost the Department $250k. If an expected savings in negotiated price is anticipated at $100k, it's not worth spending the $250k to save $100k. It is recommend that the reviewing team develop a plan on how to approach evaluating price. The thoroughness of that plan should be commensurate with both the proposed dollar value and the anticipated negotiated award price.

Exploratory Study:

As consumers of non-Governmental products or services, we dedicate a certain amount of time researching prices. A 2016 study by Zillow shows the number of hours dedicated to researching various purchases (left graphic). By adding a column comparing the hours spent to the average product cost, it appears effort spent researching is inversely proportional to the product cost. The graphic on the right shows an exponential regression curve which has a significantly high correlation.

Investment	Hours Spent on research	Average Product Cost	Research: Cost Ratio
Home	20	$ 184,600	0.01%
Vehicle	11	$ 33,666	0.03%
Major Home Improvement	7	$ 49,240	0.01%
Mortgage decision	9	$ 147,680	0.01%
Vacation	9	$ 2,788	0.32%
Minor home improvement	4	$ 700	0.57%
Computer	6	$ 1,299	0.46%
Television	4	$ 1,224	0.33%
Mobile Phone	4	$ 349	1.15%



Using the regression formula from the above analysis (hours researching per product value), the table to the right represents major procurements and the estimated amount of time associated with their research. "Hours Researching" represents total dedicated time e.g. 40 hours would be the equivalent of 1 analyst, 100% dedicated for 5 8-hour days. This is not a recommended guidepost to use for procurements; rather an opportunity of self-reflection and thinking about the internal efforts involved with determining a fair price.

Value of Procurement	Hours Researching
$25M	33
$50M	38
$100M	43
$250M	51
$500M	58

Proposal Independent Price Estimates (PIPEs)

Price Estimate Consideration: Imagine this; blur the lines of the cost estimating (FM-1515) and price/cost analyst (PK-1102) functions. PIPEs would encourage buyers to think about pricing a contractor's proposal just like a cost estimator would prepare a cost estimate. Instead of the Independent Government Cost Estimate (IGCE) being done at the program level, have the

buyer, pricer, and cost estimator team up and develop an independent Rough Order of Magnitude (ROM) estimate for the effort as outlined in a solicitation for proposal. The information can be gathered based on market intelligence, prior similar-purchases and engineering estimates. As a price (not cost) evaluation, a majority of the data should be market research based. Receipt of a proposal would not be necessary in order to establish an initial pricing baseline, and only minor adjustments should be needed after a proposal is received.

Easy Example: A Technology Investment Agreement (TIA) proposal is anticipated to be submitted. The majority of the effort is expansion of existing facilities to provide more space for research on biological warfare attacks. In advance of the proposal, price analysts performed market research and easily identified 10+ press releases by various pharmaceutical companies publishing their investment in facilities expansion. For example, one news headline reads, "Pfizer invests $147M and is now 98,500 square feet larger." By analyzing the data obtained through market research, a ROM estimate of $1,500 per square foot is developed. Using the PIPEs process, a large portion of the analysis is completed prior to proposal receipt. Once the proposal is received the proposed amounts can be compared to the ROM estimate, expediting the proposal evaluation process.

Full Time Equivalent (FTE) "Labor-cost estimate" Consideration: Generally, a buyer can use resources such as salary.com, glassdoor.com or even Bureau of Labor Statistics (BLS) to estimate the direct labor costs associated with a specific labor category. The buyer can also use information from DCMA, or DCAA to translate direct labor or salary rates into *fully burdened labor rates.* This is simply a different way to look at a proposed price by using commercial market labor rate data and multiplying them by estimated industry burdens. Even if the proposed solution was not presented with separate, identifiable cost elements, or a level of cost element granularity, the Government can reverse-engineer the proposed price to gain an understanding of the estimated hours proposed or the Level of Effort (LOE) needed to accomplish the task at hand.

Easy Example: An offeror quoted $5,000 in machining costs to design/manufacture a mold used to produce a prototype face shield. The initial reaction was that the proposed price seemed a bit high. Public resources can be used to find that machinists make between $15-25 per hour. Using a 2x markup as a best-guess, hourly rates can be converted to fully burdened labor rates. For purposes of this labor-cost estimate, $40 an hour is used as the fully burdened labor rate. Dividing the proposed price of $5,000 by the fully burdened labor rate of $40 per hour gives an estimate of 125 machine hours ($5k / $40 = 125 hours). Assuming this a labor-heavy effort, 125 hours can be analyzed as the equivalent of 1 FTE for 3.125 weeks. We created an additional method to evaluate the proposal. We can now evaluate if 1 machinist for 3.125 weeks is a reasonable LOE.

The 'markup' rate is commonly between 1.5x-2.5x depending on the industry; however, it can deviate outside of this range. Here are a few resources to help with this type of analysis:

- Analysts who regularly perform cost analyses on traditional defense contractors, you can obtain a markup rate by labor category simply by taking an existing proposal, putting 1 hour in a labor line, and comparing to the final proposed price in the model
- Defense Contract Management Agency (DCMA) Commercial Item Group (CIG) built a model to estimate this mark up using public census data. https://www.dcma.mil/commercial-item-group/ Additional Resources, Labor Rate Census Pricing
- GSA CALC is a tool which has *wage-at-price* information *https://calc.gsa.gov/*

Alternative Resources

Defense Contract Management Agency (DCMA): DCMA established a process to provide customers support in evaluating price in an OT environment. If a proposal evaluation is requested through the cognizant cage code, that Contract Management Office (CMO) may be able to support a cost analysis of the proposal. But to do so, the associated proposal must be in a format which allows for cost elements to be analyzed. DCMA can also assist the Agreement Officer on the type of information that should be in the solicitation if they do plan on asking DCMA for this type of review. Traditional Defense Contractors may submit a proposal which includes elements such as overhead and G&A using proposed indirect rates. For these contractors, DCMA may have rate information to either validate or recommend different rate percentages. DCMA Commercial Item Group (CIG) may also be a resource for price analysis (not cost analysis). With any of the DCMA options, if schedule is of top importance to the program, recommend requesting a tailored review, and dictating the required due date.

Defense Contract Audit Agency (DCAA): DCAA established a process to provide customers support to evaluating price in an OT environment. DCAA may be able to provide audit or advisory services to support customer evaluations of price or customer assessments of compliance with solicitation terms. Early engagement and coordination is critical to determine the type of services DCAA can provide due to the flexibility and diversity in the solicitation terms and requirements. Some of the significant factors influencing the services include audit history at the potential awardee, record access and audit clauses, awardee system requirements, applicable cost principles or standards, sub-awardee flow down provisions, award timeline, et cetera. The KO/AOs should contact the DCAA Financial Liaison Advisor or DCAA cognizant audit office to discuss their needs and services that DCAA can provide. Services may range from providing relevant information in their audit files that can assist in assessing price reasonableness to performing audits to support your needs.

Consortium Manager: Consortium managers have offered to support price analysis. This may be a data point in the price analysis. However, the Government has a requirement to determine price reasonableness, and consideration should be given to the fact that this is a non-Government entity performing an inherently governmental function.