

# The Role of Cost Estimating in Source Selection

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For:

ICEAA Conference

June 10-13, 2014

**Note:** The following paper is largely based on Federal Aviation Administration source selection for a primarily labor/services-based "best value" acquisition.

As Government agencies strive to provide the best services to the nation's citizens, cost estimating has become a key contributor to new acquisitions in this ever-changing and stringent budget environment. When equipment ages and new technologies emerge, the Government undertakes acquisition programs to implement solutions that resolve mission shortfalls. Throughout this process, acquisition teams must select companies offering the best service at the best value while competing for funds with other programs. It is in their best interest to develop an Independent Government Cost Estimate (IGCE) prior to releasing the Screening Information Request (SIR) and evaluating proposals. The IGCE, which estimates the price the government expects to pay for vendor services and products on contract, serves as a benchmark to compare vendor pricing, and together with the technical evaluation forms the basis for a sound vendor selection. Developing the IGCE involves many decisions: 1) When should the cost team begin to interface with the technical team? 2) How should the cost model be organized, in accordance with the Statement of Work (SOW) or Contract Line Item Number (CLIN) structure? 3) What level of detail is required, estimating at the Contract Deliverables Requirements List (CDRL) level? 4) Why should the cost model correlate to the price evaluation tool and the program schedule? This paper will answer such questions.

A team comprised of program management, contracting, technical, logistics and cost/price analysts is often created at the onset of the acquisition process to perform acquisition activities. During the planning phase, members of this multifunctional team develop program requirements and the corresponding SIR, also known as the Request For Proposal (RFP). Various documents included in the SIR, such as the SOW, the list of CLINs, and the Price Evaluation Tool (PET), are closely related to the IGCE. It is of utmost importance for the technical and cost experts to work together from the beginning in order to ensure the development of a good IGCE, one that withstands scrutiny and is accepted by the pertinent approval authority. In the case of the Federal Aviation Administration (FAA), the Office of Financial Controls reviews and accepts the IGCE, approves the labor categories, and establishes the contract ceiling based on contractor total projected costs indicated in the IGCE. Therefore, a strong IGCE will help set the basis for an executable contract.

Components of a good IGCE include labor categories, skill levels, associated hourly rates, and number of hours required by each class of employee to perform the job. Labor burden, overhead, other direct costs, general and administrative expenses and profit/fee are also part of the estimate. Labor categories and experience levels are defined by the technical and cost experts in the acquisition team. Before the cost team starts collecting data, they need to work with the technical team to understand program requirements. Then, after determining the estimating structure, the cost team can proceed to identify ground rules and assumptions, collect data, and develop and document the estimate. This is an iterative process throughout which the members of the team will communicate constantly with the technical experts.

The technical team helps define the scope of the acquisition. They offer valuable insight into software and hardware system requirements, test and evaluation procedures and staffing, and

implementation, among other necessary contractor activities required to deliver the solution. This information is encompassed in the SOW developed by the acquisition team. The SOW provides the necessary detail of work to be performed by the vendor in order to meet program goals. An example of possible sections of the SOW include: 1. Program Management, 2. Solution Development, 3. Continuing Engineering, 4. Test and Evaluation, 5. Production and Deployment, 6. Logistics, and 7. Training. These sections can serve as the skeleton for the CLIN structure, as well as the Work Breakdown Structure (WBS) of the cost model.

Within the SOW sections the acquisition team can specify the Contract Deliverables Requirements List (CDRLs) that the vendor will have to develop and provide to the Government. If possible, the cost team should estimate the effort associated with the CDRLs discretely. This information provides sufficient level of detail to facilitate vendor performance tracking later in the program. With this in mind, what determines WBS structure? Looking at a sample SOW section and comparing it to its corresponding CLIN section will help answer this question. The table below shows an example of the Program Management (PM) section of the SOW.

SOW #	SOW Description
1.0	Program Management
1.1	Program Management Office
1.2	Program Control
1.3	Risk Management
1.4	Contract Status Tracking
1.5	Performance Management
1.6	Meeting Support
1.7	Configuration Management
1.8	Quality Management

**Table 1: Program Management SOW Example**

The PM subsections listed could dictate Level II of the WBS. Nonetheless, it is important to consider the format in which the vendor will provide proposal pricing in order to decide how to generate an appropriate WBS.

Note that the WBS drives data collection and cost estimate development; in the end, the cost team wants an estimate structure comparable to proposal pricing submitted by vendors, who often provide pricing by CLIN. Ignoring these factors hurts the effectiveness of the IGCE as well as the outcome of price evaluation. Therefore, the cost team should consider the CLIN structure and, if possible, develop a WBS that mirrors the list of CLINs. The following table shows the PM CLIN section. Each CLIN describes activities that will be carried out by the selected vendor.

CLIN #	CLIN Description
PGM_01AA	Perform Program Management
PGM_01AB	Provide Program Management Plan
PGM_01BA	Implement Configuration Management Program
PGM_01CA	Perform Functional Configuration Audit
PGM_01CB	Perform Physical Configuration Audit
PGM_01DA	Maintain Quality Management System
PGM_01EA	Performance Management Fee

**Table 2: Program Management CLIN List Example**

When the time comes to evaluate vendor proposals and compare them to the IGCE, the task at hand becomes easier when the cost estimate framework reflects the CLIN structure; assuming vendors provide their pricing by CLIN, rather than SOW section.

During the development of the SIR, constant communication is required between the technical and cost teams, especially as modifications are made to the SOW and CLIN structure. The IGCE should be updated as these changes occur to avoid discrepancies between proposal pricing and the IGCE, which will facilitate the price evaluation process, minimize the need for mapping and maximize traceability across products. The goal is to minimize problems during proposal evaluation.

Source selection objectives include conducting a comprehensive evaluation of the offerors' proposals, doing so in the most efficient and least complex manner, selecting the offeror whose competitive bid is the best value to the Government based on cost/price and technical factors, and documenting the basis for the selection decision. In order to achieve these objectives, some acquisition teams develop a Price Evaluation Tool (PET) which becomes part of the SIR package. The PET is best described as a template that is filled in by the vendors with pricing. This tool can be developed in Excel and comprises the deployment schedule, hardware counts and pricing, installation costs, and support services CLIN pricing among other sections to be completed by the vendors. Some sections of the PET, such as deployment schedule, are populated by the Government acquisition team prior to releasing the SIR; the pricing piece is populated by the vendors and submitted with their proposals.

The acquisition team also populates the PET with IGCE figures. The tool contains summary tables showing the total evaluated price for different areas of the SOW. Comparing the PET summary tables provided by each vendor to the tables reflecting IGCE figures will clearly show differences in pricing. The acquisition team will investigate further particular areas of interest where the proposals differ greatly from each other and the IGCE. Throughout this process, the IGCE serves to conduct a "fair and reasonable" assessment of vendor pricing, as well as determine cost realism. The following table depicts the PM section of the PET.

CLIN #	CLIN Description	SOW Reference	Contract Type	Billing Unit	Contract Year 1				
					CLIN	Billing Unit QTY	Billing Unit Price	Total FFP	Target Cost
PGM_01AA	Perform Program Management								
PGM_01AB	Provide Program Management Plan								
PGM_01BA	Implement Configuration Management Program								
PGM_01CA	Perform Functional Configuration Audit								
PGM_01CB	Perform Physical Configuration Audit								
PGM_01DA	Maintain Quality Management System								
PGM_01EA	Performance Management Fee								

**Table 3: Program Management PET Example**

Note that if the PET is developed based on CLIN structure, and the IGCE developed based on SOW subsections, this will add a mapping complexity at the time of evaluating proposal pricing. The mapping may not be straightforward; one CLIN could be related to more than one SOW section. Conversely, if the PET and IGCE are in line with the CLIN structure, the evaluation team will be ready to assess all proposals and make a decision that will benefit the program, and ultimately end users.

Finally, once a vendor is selected and the contract is awarded, the acquisition team switches gears to the execution phase. As shown, from the development of an IGCE to Source Selection, many players come together to ensure the vendor selected will provide superior service at the best value. The cost and technical experts are main players throughout the source selection and overall acquisition processes. Developing an IGCE and then utilizing it to evaluate vendor proposals for the acquisition of new technology is vital for acquisition programs. Although challenging, with careful planning this process can be done successfully and the IGCE will facilitate source selection and the subsequent contract award. If the cost estimate is developed the right way, organizations will have more leverage during contract negotiations with the vendor, and the procurement activities and contract will run smoothly and meet agency goals.