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Douglas D. Gransberg, Texas Tech University
Michael A. Ellicott, Wayne State University

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Gransberg, Douglas D;Ellicott, Michael A
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TECHNICAL ARTICLE

Best-Value Contracting Criteria

Dr. Douglas D. Gransberg, PE, and Michael A. Ellicott, PE

Federal government construction contracting in the US historically has focused on awarding contracts to the lowest responsive, responsible bidder [7]. This assumes that by carefully crafting a complete, unambiguous set of project plans and specifications, price becomes the sole competitive factor [2]. More subtly, this approach assumes that only construction costs matter. A government need not consider procurement, project management, lost opportunity, or similar costs.

Best-value procurements focus on selecting the contractor with the offer most advantageous to the government, when price and other factors are considered. These other factors include technical and managerial merit, financial health, and past performance [8]. Best-value procurements allow government contracting agencies to evaluate offers on the basis of total procurement costs, construction quality issues, completion dates, additional features, and technical innovations. More importantly, best-value procurements force the early development of detailed project and procurement plans and create solicitations that contain accurate source-selection criteria. This combination of early planning and quality-based contracting yields significant benefits in construction timeliness, cost containment, and customer satisfaction.

LOW-BID CONTRACTING

Traditional cost- or price-based contracting stresses cost and price competition between proposals that meet the minimum requirements stated in the solicitation [4]. After a customer determines a construction requirement, the technical project manager develops these requirements, translates them into design criteria, solicits architect-engineering firm proposals, and selects the design firm (normally making the selection based on quality rather than price). The design firm prepares comprehensive, detailed plans and specifications that outline not only what to build but how to build it.

A contracting specialist next attempts to turn the design package into an unambiguous solicitation package that results in a contract to construct a facility meeting the customer's requirements. These documents, after exhaustive review by several agencies, theoretically outline the government's complete requirements in terms of features, quality, and timeliness. Ideally, construction cost remains the sole factor used to determine the successful offeror. Construction contractors develop detailed bids and carefully review each detail in the solicitation to calculate the minimum cost proposal. Selection of the low bidder theoretically selects the contractor with the most innovative, cost-effective solution to the problem. A low bid also could indicate a quality contractor with excess capacity or one already mobilized in the area. In any event, a low-bid award does exactly what the name implies: it selects the contractor who promises to construct the facility at the lowest construction cost [1]. This approach has several obvious advantages:

• a simplified, though time-consuming, solicitation preparation and review;
• a simplified selection process in which the lowest responsive, responsible offer wins; and
• it is difficult to protest—protesters must show a flawed process since the low bidder is readily apparent.

Conversely, disadvantages of low-bid contracting include the following:

• it makes a selection based only on price, not quality or timeliness;
• it assumes perfect (unambiguous) plans and specifications;
• it assumes that the minimum requirements meet the customer's needs and that exceeding minimum standards does not enhance the project; and
• the process may select a contractor buying into the contract with a low bid [2].

Breaking the Paradigm

Low-bid contracting creates a business relationship based on price [2]. During construction, both sides attempt to keep construction costs within the agreed-upon amount, or failing that, to minimize cost increases. Construction cost containment becomes the major focus of effort, often resulting in extended construction periods, omitted features, and reduced project functionality. Other considerations become secondary. In 1992, the US Army Corps of Engineers’ Europe District (EUD) decided to break this paradigm. The district analyzed the award and administration of four problem contracts to develop improved contracting procedures. The district studied two contracts to build medical/dental clinics at Stuttgart and Rhein-Main Air Base in Germany (both awarded to the same contractor), a contract to build 188 units of family housing in Vilseck, Germany, and a contract to construct a US Air Force hospital in Incirlik, Turkey.

Case Studies

All four projects studied shared the following characteristics:

• they were behind schedule;
• they were all above the original program amount authorized by the US Congress;
• quality deteriorated during construction; and
• marginal firms submitted the low bids.
The Stuttgart Clinic experienced a 30 percent cost growth and finished 14 months late. The Rhein-Main Clinic experienced only a 10 percent cost growth, but the contractor defaulted 17 months after the original completion date, forcing a costly, extended reprocurement action to complete the project. The Vilseck Housing Project recorded a 19 percent cost increase and a 2-year delay in completion. Finally, the Incirlik Hospital saw a 24 percent cost increase and a 2-year delay.

An examination of the history of each successful offer revealed information that may have eliminated the firm from competition if the district had used a different procurement strategy. The German firm building the two clinics consistently produced quality products but had a long history of financial problems and a reputation for buying in to contracts. The two concurrent clinic projects exceeded the firm’s financial resources and managerial ability. The EUD awarded the Vilseck Housing Project to a joint venture between an American and a German firm, neither of which had any experience in constructing manufactured housing in an international setting. Undercapitalized from the beginning, this project suffered from a lack of skilled management and workers. The German firm eventually declared bankruptcy, leaving the American firm to complete the project. The Turkish firm that was awarded the contract for the Incirlik Hospital, though well established and with a wealth of technical talent and expertise, was operating beyond its financial capability. When the Turkish inflation rate reached 80 percent in 1992, the undercapitalized firm experienced severe cash flow problems and slowed project execution to match available cash.

US Government Procurement Initiatives

Beginning in 1984 with the Competition in Contracting Act (CICA), the U.S. Congress recognized the need for improved procurement procedures. Federal acquisition regulations (FAR) developed to implement CICA include language permitting quality- or value-based selections. FAR 15.605 states, “Quality also shall be addressed in every source selection” [5]. This FAR section also states: While the lowest price or lowest total cost to the government is properly the deciding factor in many source selections, in certain acquisitions the government may select the source whose proposal offers the greatest value to the government in terms of performance and other factors. Government procurement officials authorize best-value procurements where the quality performance over and above the minimum acceptable level will enhance mission accomplishment and be worth the corresponding increase in cost [9].

The EUD’s experience indicated that minimum levels of contractor performance rarely met customer expectations. Increases in quality were generally worth a corresponding increase in cost.

With this regulatory backing, the EUD set out to revamp its procurement policies. Changing customer requirements, increased competition from other construction management agencies, the US Army Corps of Engineers’ emphasis on partnering, and its adoption of total quality management (TQM) all provided the impetus required to produce needed change. The district instituted several new procedures designed to improve quality, responsiveness, and customer sensitivity while reducing the total time and money required for project completion. These revised procedures included the methods described below.

- Best-value contracting—contracting procedures that are focused on the early identification of key features and solicitations evaluating timeliness, quality, and past performance to reduce total cost. A low bid alone no longer guarantees success.
- Project execution teams—these are a synergistic combination of project managers, project engineers, designers, contract specialists, customers, and other key players. Project execution teams extend the concept of lifecycle project management by the early involvement of all concerned in the development of the complete project package: design, specifications, solicitations, package, and evaluation criteria. The situation is analogous to Ford Motor Company involving the insurance industry in the design of the original Taurus, and project execution teams lead to comprehensive, creative project solutions.
- Performance specifications—these are design specifications that describe what the facility must do rather than how to build it. This approach solicits good ideas from contractors and creates a richer selection of contractor proposals.
- Partnering—partnering is a proactive, positive relationship between the contractor, customer, and district that creates a “we” attitude. Partnering focuses on fixing problems, not on assigning blame.

BEST-VALUE CONTRACTING

Best-value contracting ties all of these initiatives together through quality-based contracting. Successful best-value contracting requires the following things:

- The early determination of key parameters (features, completion date, security requirements, mobilization sites, etc.)—time and money are interchangeable at this point.
- The development of performance requirements—the project execution team must prioritize key project criteria. Minimizing project requirements maximizes contractor innovation and choices among alternatives.
- The development of evaluation criteria—the key to successful source selection, evaluation criteria must directly relate to the usefulness of the project and permit a rational tradeoff between technical merit and cost [3].

Evaluation Criteria

Evaluation criteria can be either quantifiable, in terms of dollars, or non-quantifiable [3]. While the solicitation must specify general criteria and the relative value between criteria, source selection panels often develop detailed evaluation criteria capable of discriminating between various proposals after an initial review of all proposals. Criteria can include these items:

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technical excellence;
management capability;
financial capability;
personnel qualifications;
prior experience;
past performance;
optional features offered;
completion date; and
risk to the government.

While not specifically scoring cost,
source selection panels use contract price
to compare the technical value versus the
cost of the added-value of various propos­
als. This is called the cost-technical trade­off [3]. The US government must show
that a more expensive proposal provides a
 corresponding increase in value.

BEST-VALUE CASE STUDIES

The structural failure of a military
commissary (grocery store) in Chievres,
Belgium, provided an initial opportunity for
the EUD to combine best-value contracting
with its other initiatives. After rejecting the
project several times, the US Congress
authorized the $3.5-million project on June
30, 1992, and mandated a contract award by
September 30 of the same year. The district
received the project on July 1st and con­
venced the project execution team on July
2nd. Because of time and funding con­
straints, the team decided on a design-build
contract using performance specifications.
Extensive partnering with the Belgian gov­
ernment’s Joint Staff for Infrastructure pro­
duced a list of 19 prequalified Belgian firms
that had the required expertise and capabil­
ities. Further, a Belgian representative par­
ticipated in design development and pro­
posal evaluation. The district issued the
request for proposals on August 14th and
received five proposals on September 9th.
The contract was awarded on September
25th and was followed by groundbreaking
on October 2nd. Phase I, the sales area,
opened before Christmas (a key customer
requirement), and the contractor turned
over the entire project on schedule on
March 15, 1993. The project experienced
negligible cost and schedule growth due to
distribution of risk and a clear understand­
ing of key requirements resulting from best­
value contracting.

The final phase of a $60-million
construction/renovation project at the Frankfurt
American Hospital provided another oppor­
tunity to test best-value contracting. Due to
previous delays, approximately DM25 mil­
lion (US $15 million) in construction work
remained. Expiring funds required the comple­tion of all work and disbursement of
all funds in 15 months. A solicitation pack­
age that focused primarily on the comple­tion date was used to create a prioritized, well­
deﬁned scope of work resulting in the pro­
ject being awarded to a consortium of qual­
ity contractors. The firms completed the
work on schedule with minimal cost growth.

Two projects in Turkey provided fur­
ther proof of the success of these initia­
tives. The US Air Force authorized the
construction of a standard-design dormi­
tory in a remote location in eastern
Turkey. Significant civil unrest and
extreme weather conditions made winter
construction impossible and required an
accelerated construction schedule. Orig­i­
inally designed with a 18-month construction period, the project execu­tion team revised the solicitation to
emphasize a fast-track schedule. The suc­
cessful contractor offered a 9-month con­
struction period and completed the pro­
ject on schedule with less than a 1 per­
cent cost growth, despite a major design
error in the structural plans [6].

The failure of the existing water distri­
bution system at Incirlik Air Base in
Turkey dictated an expedited project to
construct a new water treatment plant.
The customer’s primary goal was to restore
potable water as quickly as possible to
minimize expensive distribution of bottled
water. The team used performance speci­
fications based on off-the-shelf technol­ogy. Fourteen firms submitted proposals.
The technical review panel selected four
finalists based on technical merit, con­
struction period, prior experience, and a
cost/benefit comparison. After requesting
best and final offers, the US government
awarded the project to the contractor
offering the best value. The project was
completed on schedule, at 60 percent of
the original program budget [10].

Best-value contracting offers the
following advantages over low­bid procurements:

- key players agree on important proj­
et criteria early in the procurement
process;
- the contractual relationship focuses
on quality and value rather than only
on construction cost;
- the process encourages contractor
innovation and solicits alternative
proposals; and
- best-value contracting meets the cus­
tomer’s needs by selecting a contrac­
tor best able to satisfy those needs.

Some disadvantages include the fol­
lowing:

- the solicitation package requires more
time and effort to prepare properly;
- the evaluation process becomes more
complicated and requires more atten­
tion to detail; and
- the process increases the danger of
bid protest and a subsequent delay in
contract award.

Successful best-value contracting
requires the early commitment of time,
personnel, and resources to succeed. By
determining priorities and identifying key
features, this up-front investment results
in significant savings in the total project
cost, minimizes delays, and increases cus­
tomer satisfaction. Customers help select
contractors most responsive to their needs, construction managers participate
in the selection of quality contractors, and
the government gets the best value for its
money. More importantly, the key tenets
of best-value contracting already exist in
current US federal acquisition regula­
tions and do not require special autho­
rizations or waivers.

KEY ELEMENTS OF SUCCESS

Best-value contracting procedures
 can find ready application outside the
Byzantine world of government contract­
ing. Private owners and architect/engineer
firms could easily adopt the EUD model.
Many firms award negotiated
design and construction projects on the
basis of quality. Applying TQM princi­
samples, focusing on continually improving both the product and the process, and making an up-front investment of time and resources will improve the quality of any construction project. A best-value contractor is the best partner in the rapidly changing world of construction contracting.

REFERENCES