Best Value Formula

The Best Value Formula is About Not Punishing the Government

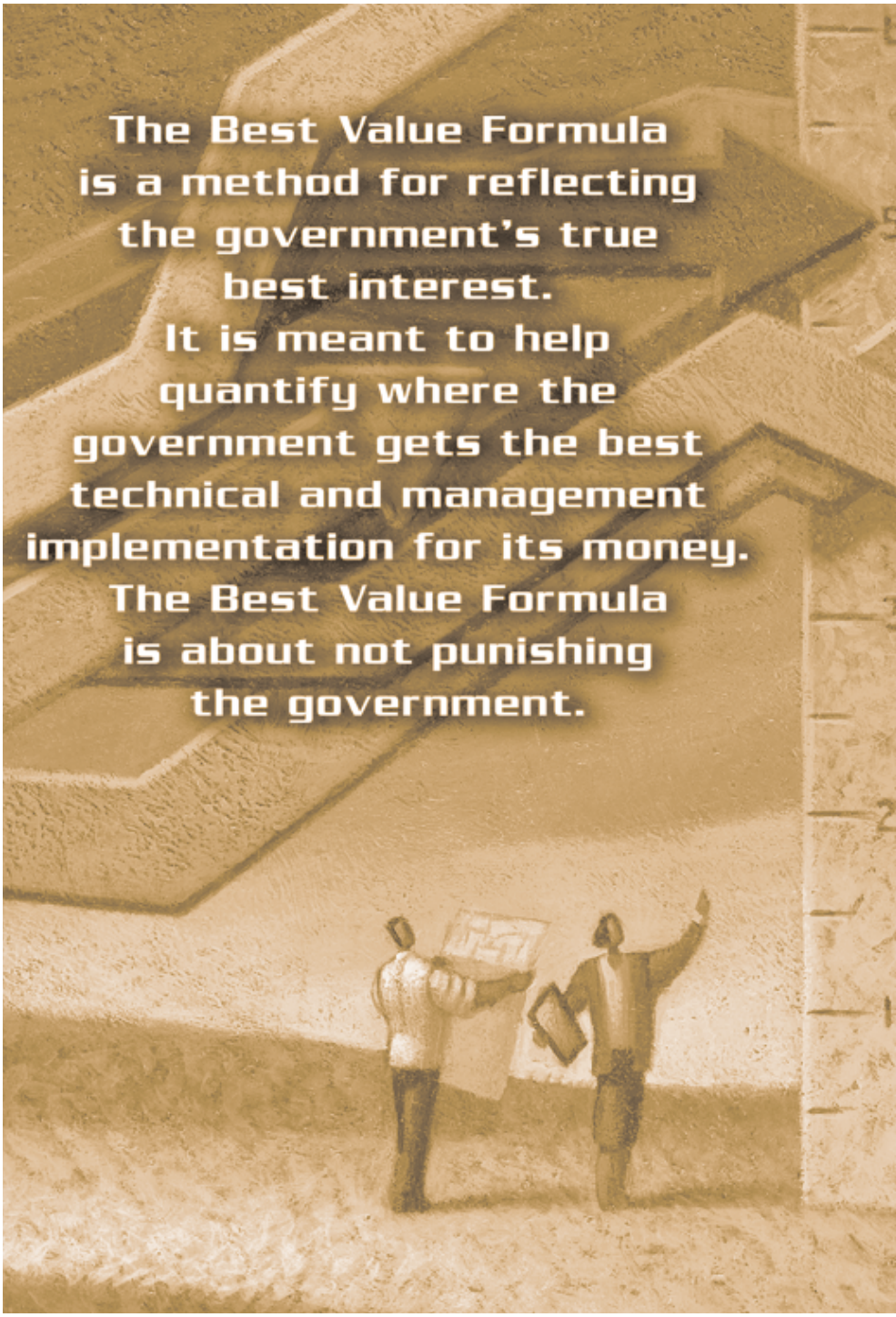
DAVID P. QUINN

A constant concern when preparing to release a Request for Proposal (RFP) is one bidder throwing things completely out of whack by "low balling" the proposal. In other words, they bid extremely low, willingly incurring a loss in most cases, just to get the job and position themselves for future contracts from the same acquisition organization. Because the bidder offers such a low price for the contract, their limitations in their technical and management proposals get lost.

Eyes on the Prize

Our organization is in the process of preparing for a firm fixed price contract to perform a set of concept studies. The results of the concept studies will be used as input in a development and integration contract. The concept studies contract is not considered a lucrative contract. The prize is actually the development and integration contract. Everyone believes the winner of the concept studies contract will have an inside track on the more lucrative contract.

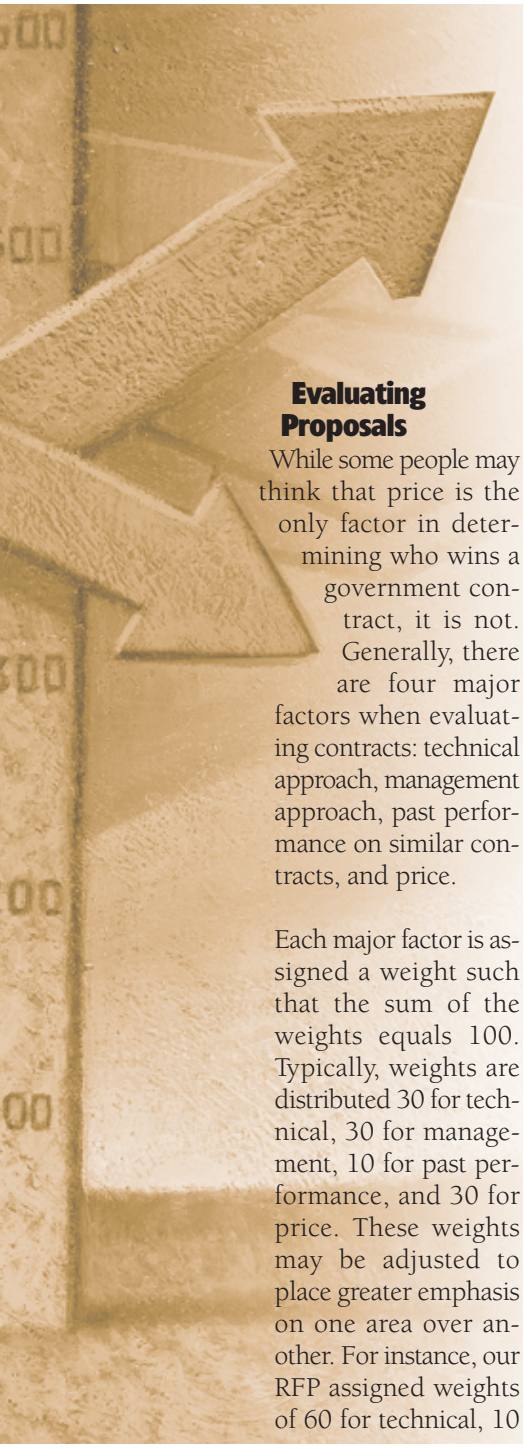
When developing the proposal evaluation criteria, we were haunted by the fact that we could only take the weight of the price factor so low (30 percent) without requiring a General Accounting Office (GAO) audit of the bidders on the contract. The weight for the price factor looked relatively high, especially for a fixed price contract. Our fear was that one of the bidders would bid incredibly low just to get in position for



Quinn was a Senior Computer Scientist for the National Security Agency. He has 19 years of software and systems engineering experience, focusing more recently on process improvement.

the follow-on contract and that the technical and management factors would become worthless at that point.

This isn't to say that we would not have welcomed a very low price for a very good technical and management proposal. Ideally, this is what everyone wants. We just wanted assurances that this would be the case and that a poor proposal did not win just because it was priced excessively low.



Evaluating Proposals

While some people may think that price is the only factor in determining who wins a government contract, it is not. Generally, there are four major factors when evaluating contracts: technical approach, management approach, past performance on similar contracts, and price.

Each major factor is assigned a weight such that the sum of the weights equals 100. Typically, weights are distributed 30 for technical, 30 for management, 10 for past performance, and 30 for price. These weights may be adjusted to place greater emphasis on one area over another. For instance, our RFP assigned weights of 60 for technical, 10 for management, and 30 for price. Past performance was made a pass/fail factor with no weight.

Factor/Sub-Factor	Weight	Rating	Score
Technical	60	88.3%	53
Trade Studies	20	85%	17.0
Architectures	15	90%	13.5
Innovation	25	90%	22.5

TABLE 1. **Example of Technical Score**

Each major factor may have one or more sub-factors that comprise the major factor. For instance, management may have sub-factors of project management and key personnel. Each sub-factor is weighted and scored individually. For our RFP, the technical factor had sub-factors of trade studies, architectures, and innovation with weights of 20, 15, and 25, respectively.

When evaluating proposals, a defined set of criteria for each sub-factor is rated. The rating is done as a percentage of a sub-factor and has an adjectival descriptor associated with it. The usual rating scale is:

Excellent	90-100
Good	80-89
Acceptable	70-79
Marginal	60-69
Unacceptable	0-59

Unacceptable ratings are based on completely missing one of the criteria for a sub-factor or major factor. Marginal means that there are faults in the proposal against certain criteria but the criteria are addressed. Acceptable means that the criteria are met. Ratings above acceptable indicate that the proposal had some additional information that helped it stand out.

The score for a factor is therefore defined as the sum of the scores of the sub-factors. The score of the sub-factor is the rating times the weight. Using our technical factor as an example, a sample scoring would look like Table 1.

The final score for a proposal evaluation is the sum of the scores for the major factors. In most instances, the final score formula looks like this:

Final Score = Technical Score + Management Score + Price Score

The highest final score is considered the contract winner. To select a bidder that did not receive the highest score requires lots of extra paperwork. In the case of a contract similar to ours, 500 pages of justification were generated to justify not selecting the highest score.

Cost as a Factor

One factor that is not rated on the scale shown in Table 1 is price. Cost simply indicates what the vendor will charge for its services. Therefore, all price proposals are assumed to be acceptable.

A very generic formula is used when determining price as a factor for most contract proposals. All the proposals are received and the lowest price of all the proposals becomes the standard by which all the proposals are evaluated. One at a time, each proposal is evaluated by taking the lowest proposal price

Factor	Bid 1	Bid 2	Bid 3	Bid 4	Bid 5
Bid Price	9	10	9	8	4
Lowest Price	4	4	4	4	4
Price Weight	30	30	30	30	30
Price Score	13.3	12	13.3	15	30

TABLE 2. **Impact of a Low Ball Bid**

and dividing it by the price of the proposal being evaluated. That fraction is then multiplied by the weight of the price factor for the price score. The formula looks like this:

Price Score = Price Weight times (Lowest Price divided by the Current Proposal Price)

In theory, this is not bad. It works best when the proposed prices are all in the same neighborhood. For instance, everyone bids in the $8-10 million range. However, when theory meets reality, reality tends to win.

If one bidder really sends in a low price, all the other proposals pay the consequence. If three bids are in the $8-10 million range but a fourth bid comes in at $4 million, the other proposals lose almost half the price factor points right away. It requires that the $4 million proposal be deemed unacceptable for its technical or management proposal in order to lose and not have any impact on determining the contract winner.

Table 2 (bottom of preceding page) is an example of a bidder trying to get a contract based on an extremely low bid.

Due to the extremely low bid of Bidder 5, Bidders 1 through 4 lost over half the number of price points available. The reality is that if Bidders 1 through 4 received ratings of 100 on each factor, the best overall score they could get is 85.

Examples of Impact of Price on Contract Award

It is important to see what this looks like in terms of comparative bids on a contract. Table 3 shows five bidders' proposals on a contract, with two of the bidders trying to "low ball" the other bidders. Past performance will be pass/fail so no weighted scores are needed for the past performance factor.

As the Final Scores in Table 3 show, the order of award follows the order of price from least to most (i.e., Bidder 5, Bidder 4, Bidder 3, Bidder 1, then Bidder 2). Bidder 5 was able to win a contract, despite having a barely adequate proposal, by "low balling" the bid. Obviously, this does not give the government the best value for its money and perpetuates the stereotype that the lowest bid always wins. The government's only hope is that the bidder fails the past performance factor.

Factor	Bid 1	Bid 2	Bid 3	Bid 4	Bid 5
Technical Weight	40	40	40	40	40
Technical Rating	85 %	90 %	90 %	80 %	70 %
Technical Score	34	36	36	32	28
Management Weight	30	30	30	30	30
Management Rating	90 %	90 %	90%	80 %	70 %
Management Score	27	27	27	24	21
Price Weight	30	30	30	30	30
Price Bid	7	10	6	4	3
Lowest Price Bid	3	3	3	3	3
Price Score	12 .9	9 .0	15 .0	22 .5	30 .0
Final Score	73 .9	72 .0	78 .0	78 .5	79 .0

TABLE 3. Example of Proposal Scores

Finding the Real Best Value

The desirable position for the government is to find a way that directly considers the price bid with the technical and management capability so that price is not the true deciding factor. In essence, the government should receive the best value for its investment by ensuring the price is proportionate to the technical and management proposals.

This actually makes the price evaluation more consistent with the rest of the proposal evaluation process. Technical and management proposals are evaluated independent of the other bidders' technical and management proposals. Great strides are taken to ensure that one proposal does not influence the rating of another proposal. However, the price proposal is directly evaluated against the other bidders' price proposal. The price evaluation needs to move away from strictly looking at comparisons between proposals.

To address price in relation to technical and management proposals, the weight of the price factor should be adjusted based on the scores of the technical and management proposals. If you add the technical and management scores and divide that sum by the sum of the technical and management weights, a Best

Factor	Bid 1	Bid 2	Bid 3	Bid 4	Bid 5
Technical Weight	40	40	40	40	40
Technical Rating	85 %	90 %	90 %	80 %	70 %
Technical Score	34	36	36	32	28
Management Weight	30	30	30	30	30
Management Rating	90 %	90 %	90 %	80 %	70 %
Management Score	27	27	27	24	21
Price Weight	30	30	30	30	30
Price Bid	7	10	6	4	3
Lowest Price Bid	3	3	3	3	3
Price Score	12 .9	9 .0	15 .0	22 .5	30 .0
Old Final Score	73 .9	72 .0	78 .0	78 .5	79 .0
Best Value Ratio	.8714	.9000	.9000	.8000	.7000
Best Value Factor	26 .1	27 .0	27 .0	24 .0	21 .0
Best Value Score	11 .2	8 .1	13 .5	18 .0	21 .0
New Final Score	72 .2	71 .1	76 .5	74 .0	70 .0

TABLE 4. Example of Best Value Formula Results

Value Ratio is created. The Best Value Ratio is multiplied by the price factor weight to get the Best Value Factor for the proposal. The Best Value Factor is then substituted for the Price Weight to calculate the price score. The formulas for this series of computations are:

Best Value Ratio = (Technical Score + Management Score) divided by (Technical Weight + Management Weight)

Best Value Factor = Best Value Ratio times Price Weight

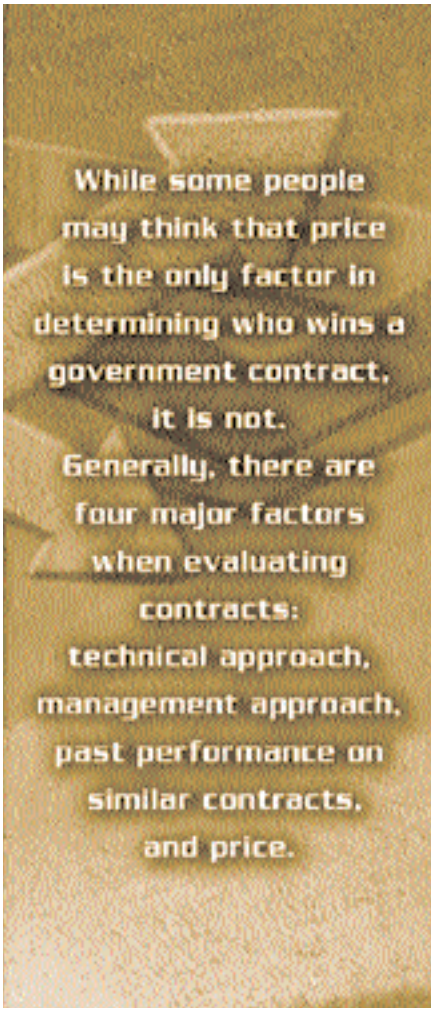
Best Value Score (or Price Score) = Best Value Factor times (Lowest Bid divided by Current Price Being Evaluated)

If this Best Value Formula is applied to the bids used in Table 3 (and repeated in Table 4), the order of the bids is changed. Hopefully, the order is better oriented toward the government's desires.

Using the Best Value Formula and assuming all bidders pass the past performance criterion, Bid 3 would be awarded the contract since its strong technical and management proposals had little impact on its competitive price. Bid 5's attempt to "low ball" the bid goes unrewarded as its weak technical and management proposals weakened the impact of its low price. The bid that provides the best value is identified and rewarded.

Whither Goes the Past Performance Factor

The examples in Tables 2 through 4 were all based on the assumption that past performance is a pass/fail factor and it does not have any weight associated with it. If past performance is a rated factor with an associated weight, it is up to the acquisition organization to determine if past performance scores should be part of the Best Value Formula. If the organization decides that past performance will be part of the Best Value Formula, the past performance score should be added to the technical and management scores in the Best Value Ratio. Additionally, the past performance weight should be added to the technical and management weights in the ratio. The Best Value Ratio would then look like this:



Best Value Ratio = (Technical Score + Management Score + Past Performance Score) divided by (Technical Weight + Management Weight + Past Performance Weight)

Punishment or Reward

A question that might be asked is whether or not a bidder is being penalized twice for a weak technical or management proposal. As the examples in Tables 2 through 4 show, all the bidders were deemed acceptable. Thus, it is hard to call applying their technical and management scores to their price proposal a punishment. At the same time, a bidder that provides an "excellent" proposal should be rewarded in some way. The Best Value Formula rewards bidders that have stronger proposals.

More importantly, the question should really be, is it fair to punish the government with a less qualified bidder just because they had the lowest price. The Best Value Formula is a method for reflecting the government's true best interest. It is meant to help quantify where the government gets the best technical and management implementation for its money. *The Best Value Formula is about not punishing the government*.

Validating the Best Value Formula

A program similar to ours just completed awarding three contracts to conduct concept studies. There were four bidders and one of them tried to "low ball" the bid—significantly. The "low ball" bid had the worst technical and management proposals but it had the highest score based on its low price. It required 500 pages of documentation to support not awarding one of the three contracts to this bidder.

The scores from this program's evaluation were entered into the Best Value Formula. The "low ball" bid ended up having the lowest score of the four bids. The Best Value Formula placed the bid in an order that best represented best value to the government.

Final Justification

When going to contract, the government should have a tool that alleviates the concern that a bidder is going to throw the entire acquisition out of line by focusing on price vs. a sound technical and management proposal. The current method for determining the impact of price is based on a comparison between bids. Price needs to be considered in direct correlation with technical and management proposals. The Best Value Formula considers price with relation to the other factors. It does a much better job of focusing the proposal evaluation process away from price and toward a more complete picture of the proposal.

Editor's Note: The author welcomes questions or comments on this article. Contact him at DQuinn@sensibleprocess.com.