

Innovative Technique For Bid-Evaluation

(Makes The Old "Matrix" Method Obsolete)

Introduction

Whether it is purchasing products or contracting services, we evaluate Bids. This critical decision-making process has two fundamental requirements: Objectivity and Transparency.

Many studies have shown that subjectivity (the opposite of objectivity) is the dominant factor in the decision-making process. Subjectivity by-omission is ignorance or incompetence, while intentional subjectivity represents a lack of professional integrity. Both can lead to undesirable, even catastrophic, consequences. As long as human beings make decisions, there is no way to eliminate subjectivity in its entirety. We must strive to minimize the subjective influence.

Transparency, the second requirement of today's decision-making needs, is defined as clarity of a process that conforms to established audit principles. For example, when large public projects are tendered; government agencies are cognizant of political-pressure, bribery, and nepotism. The responsible organization has to ensure the selection process is transparent. Yet, interest groups try to influence the final decision, usually through highly subtle ways. Further, after the decision is made, if it is not transparent, non-winning candidates or special interest groups may attack, accuse, or even initiate legal proceedings.

Indeed, even if the selection process is subject to strict monitoring, proving this to the public and to legal authorities is a daunting task.

Most companies start by assigning an in-house expert (or a consultant) to develop a Scope of Work. This coordinator will identify the criteria for the evaluation, define prerequisites and might even recommend a list of bidders (candidates). Even though the coordinator is not an expert in bid evaluation, almost always he/she coordinates the entire process.

Held Hostage By The "Matrix" Method!

We can breakdown the "Matrix" method to the following steps.

- Identify relevant criteria
- Assign criteria weights
- Compare the candidates as a group, for each criterion, and assign points to them
- Multiply the points by their corresponding criteria weights
- Add the totals for each candidate to rank them.

Until now, the "Matrix" method has been the only option available to evaluate bids, even though it is woefully inadequate.

Weaknesses of the Matrix Method

- i. Criteria Selection: Were all relevant criteria selected? There is no way to control unconscious subjectivity while selecting criteria.
- ii. Criteria Weighting: Did we err or bias the assignment of weights? Relying on personal judgments to determine weights is highly subjectivity. Assigning weights can also be skewed by vested interests.
- iii. Group Comparison: It is almost impossible to evaluate five or six candidates as a group with regard to multiple criteria and accurately to reflect preferences.
- iv. The Perils of Subjectivity: Our paradigms are a reflection of our formation (education and experience) and the circumstances. For example, consider two painters painting the same scene: the first painter just returned from his honeymoon. The second painter was just informed that his highly opinionated and vocal mother-in-law has arrived and will spend two weeks with him and his wife. Do you think their respective paintings - based on their decisions regarding color, theme, and movement - will be influenced by their state of mind?
- v. The "Persuasive" Leader: How often have you seen the "coordinator" doing all the work? What you may not realize is that he/she is also setting the tone to "sway" the decision to suit his/her preference. He/she might even have assigned the criteria weights a priori. The rest of the team begins to notice this persuasive leader guiding everyone else. Yet there is no better alternative; additionally it takes a lot of effort to coordinate the evaluation process. So they prefer to stay silent and noncommittal. In nearly 30 bid evaluations that the author has participated, he has seen this pattern in every case - without a single exception.

Some Common Misconceptions, Which Are Detrimental To Your Evaluation?

Excessive Detail

An inexperienced coordinator is likely to include every conceivable criterion in the evaluation process. Our studies with the selection processes of "Dating Services", "Real Estate", "Recruiting" and "Bid Evaluation" have demonstrated quite convincingly that using a large number of criteria is counterproductive, as it tends to dilute the process.

In our studies we used an advanced algorithmic technique to identify the significance of the number of criteria, and found that 90% of the weights (assigned to criteria) tends to be distributed among 8 - 12 criteria. In a few cases we saw this number go up to 15.

We encourage the evaluator to start with a large number of criteria, and then use an algorithmic technique to identify and weigh the most relevant criteria (try to limit the final number of criteria to about 15).

Prerequisites and Nice-To-Have Features

In any bid-evaluation process there are minimum requirements ("prerequisites") that need to be satisfied. Specific guidelines on noncompliance will determine when a bidder must be eliminated. These "rejection" guidelines must be well defined. You do not require an elaborate method for this "process-of-elimination"; a simple table would suffice.

Even experienced evaluators tend to confuse "prerequisites" (that must be satisfied as a minimum) with "evaluation criteria" (that are satisfied to various degrees). Prerequisites should not be included in the ranking process.

In addition to the "evaluation criteria" ("Need-to-have" features) there are "Nice-to-have" features. Too often the evaluator does not have a clear view of the differences. These should not be included in the evaluation unless the final evaluation produces a tie.

An airline company recently issued a tender for "catering services" in Chicago.

If the Airline wanted the supplier to be located in Chicago, "Location" would be a prerequisite (not an evaluation criterion) - bidders who are located in other areas would be eliminated. This is pretty straightforward.

If the "Location" of the 'Service Provider' is immaterial, but being in Chicago would be an added bonus - this would be a "Nice-to-have" feature. If however, constant communication needs and transport issues were of concern, then the "Location" would probably be an "evaluation criterion".

Selecting Criteria and Assigning Weights Is The Most Crucial Step In Your Evaluation

This is the most important step in the entire process.

Start by selecting as many criteria as you can think of (try not to exceed 30). Now use a pairwise comparison technique (e.g. www.XpertUS.com) to whittle down these criteria to a reasonable number of about 10 - 15. The rejected criteria often fall into the "Nice-to-have" group.

Presently, evaluators use one of two methods to assign criteria weights.

The "Distribution" Technique:

Where 100% of the weights are distributed among all the criteria.

The "Scaling" Technique:

Where each criterion is assigned a number, on a scale of 1 -10. (1 = low preference).

Try this example and see the difference; this simple example will demonstrate how frail we humans are when it comes to decision-making.

Imagine you have 100 hr. of spare-time per month that would like to spend (without any restrictions) on the activities shown in the box.

Now distribute the 100 hr. among these activities - to reflect your ideals ("Distribution" technique). The next day, repeat this exercise - this time assign weights using the "Scaling" technique. Normalize the data (divide each number by the total and multiply by 100).

Compare the two results and you will realize the difference. If you had used both of these methods to assign criteria weights - which one would you use in your evaluation? Until now we have not had a method to select relevant criteria, other than "gut-feeling". A few individuals will determine which criteria are applicable. A month later - they might agree on a different set of weights. There is no consistency.

This is not a problem unique to bid evaluation; it is human subjectivity that hinders good decision-making. Not convinced? Try another totally different example.

Rank the following factors for you 'ideal' marriage partner, using both techniques (at least 24 hr. apart); you will now be convinced that a reliable decision-making tool would be a valuable asset.

We suggest that you use an algorithmic technique, such as XpertUS, to identify the relevant criteria. Once you decide on the relevant criteria - use XpertUS again to assign the weights. Otherwise you will compromise your evaluation and reach a sub-optimal selection. XpertUS will give you consistent criteria weightings - even 3 months later.

Pairwise Comparison Is Consistent And Reliable !

The method of comparing criteria and candidates determines the final outcome of an evaluation.

Consider two bidders - if you were asked to distribute 100 points among these two, to reflect their "quality of work", you would do this with ease and a high degree of confidence. Let us add one more bidder - now you would have some difficulty, but still a manageable task. Now suppose you are faced with having to distribute 100 points among seven bidders, would you have the same level confidence in your final ranking - as you did with the two bidders? Certainly not!

By recognizing that you could decide with ease when faced with two options, you have confirmed that a method that uses a "pairwise" comparison technique is superior to one that relies on "group" comparison.

Here we considered only one criterion; now add more criteria to your selection process, each one with its variations; this is when subjectivity begins to influence your decisions adversely.

Evaluating Candidate

Once again we rely on the "pairwise" comparison technique to evaluate candidates. Start with the first criterion; each pair of candidates is compared against each other, considering this criterion only. Once we have compared all the candidates against

each other, we move repeat the process with the next criterion. XpertUS will provide you with a ranking.

Different Consolidation Techniques Add Further Confusion

We recommend that you download the paper to gain an understanding of the complexities of "consolidating" independent evaluations.

Conclusion

"Bid evaluation" is an expression of desires and feelings, hence we need a process to quantify in a consistent manner. Up until now, we have used the "Matrix" method, in spite of its many shortcomings, simply because we had no other option.

The single most important step in a bid evaluation is that of identifying the relevant criteria and assigning meaningful weights. Different criteria weighting methods provide different weightings. To do this effectively, you need a sophisticated algorithmic technique that is reliable and consistent (e.g. XpertUS).

We strongly recommend that you use an algorithmic technique such as XpertUS to evaluate candidates.

How you evaluate a project is as important as how you consolidate the independent evaluations.

If the project requires that you invite "Service Providers" and if you are committing significant amounts of resources - then it makes sense to dedicate the time and effort to use a reliable evaluation methodology (and a specialist, if necessary) to evaluate the bids.