

Integrating Parametrics with the Acquisition Process: A Solution Optimized to Government Contractor Needs

Thirty years ago, parametric estimating was a new concept anxious to be adopted as a meaningful methodology within the aerospace/defense industry. Today, it is being broadly used by not only the aerospace/defense industry, but in other industries such as telecommunications and automobile manufacturing. The parametric paradigm will continue to grow, but its future lies in its ability to integrate with traditional estimating and pricing processes.

Until very recently, parametric estimating has survived and grown within “parametric stovepipes” within organizations. Rarely, if ever until recently, have parametrics been used as the Basis of Estimate for proposals. Parametricians have been isolated from many of the mainstream activities that could benefit from the concept. The ability of parametrics to meet, or exceed, the potential envisioned by its originators will never happen if parametricians and their trade continue to be isolated from other vital estimating methodologies.

Many initiatives and trends are in place that will encourage this integration. Following is a discussion of the key elements that will positively impact this process over the next decade (thank you David Letterman).

The Top Ten Reasons Why Parametric Estimating Will Change By 2008

10. CAIV Initiative

By forcing the Government and contractors to consider trade-offs of cost vs. performance for a program’s entire life cycle, the CAIV Initiative strengthens the position of parametric analysis because it is one of the best ways to make trade decisions in the allotted time frames. Parametric estimating quickly, accurately and confidently answers all the key questions – e.g. “Can the programmatic parameters be modified to meet budgetary constraints? Can an increase in capital expenditures produce a reduction in O&M costs to fall within guidelines?”

9. Risk-Loaded Proposals

The procurement environment has changed dramatically. It is widely understood that the Government can no longer afford to fund programs with the potential of major overruns or schedule slips. As a result, many requests for proposals are requiring a complete risk management plan with a great deal of scrutiny given to risks identified and the methods for mitigation. A well-grounded, calibrated parametric estimate integrated with a risk management tool will successfully answer this demand.

At the heart of this change in the procurement environment, however, is the expectation that Government and industry will cooperate. Coming from an environment that has engendered little trust between industry and Government, contractors have never been able to openly discuss the risks of a proposal without fearing a negative response to their proposal. Government must show contractors that it will deal with risk disclosures appropriately, just as industry must be willing to disclose fully the risks and mitigation plan for a program.

8. Parametric Proposals

The Department of Defense’s decision to embrace PCEI, the Parametric Cost Estimating Initiative, has significantly encouraged the use of parametrics as the Basis of Estimate for proposals. Momentum behind PCEI has increased exponentially since its inception, and parametric estimates in Government proposals will continue to be accepted and further integrated into the mainstream estimating process.

Stand-alone parametric proposals for large procurements will not likely happen overnight, but proposal tools can no longer ignore parametric estimates as a Basis of Estimate to complement traditional grass roots techniques. Again, however, Government and industry cooperation is at the heart of the acquisition process. Support from DCAA, endorsement by DOD procurement officials, continued training for DCAA auditors in parametrics – all these factors will continue to drive further submission of parametric proposals.

7. Acquisition Streamlining

FASA, the Federal Acquisition Streamlining Act, clearly states that the Government will take steps to streamline the acquisition process. To some in Government, this means requesting less from bidders. To these people, “insight instead of oversight” means that the customer no longer has the opportunity to request information essential to understanding the contractor’s proposals. It really shouldn’t be this way. Better is to do a more effective job of **only** what is necessary and eliminating **only** what is truly not important.

Parametrics offer one way to determine cost and schedule very rapidly. Additionally, there is now other software that is integrated with parametric tools that enable costs, schedules, and the risks associated with each to be better understood, thus enabling the source selection process to be streamlined while, at the same time, making it more effective and responsive.

Acquisition streamlining is **not** designed to encourage the Government to accept a greater level of unsupported costs or unacknowledged risks than it feels comfortable with. However, that is what is happening in many instances. The pendulum has begun to swing from an emphasis on facilitating the Government’s comfort with proposed costs, prices, and schedules to approaches that impose fewer demands upon the contractor. In the current acquisition environment, the needs of both can now be accommodated. There will be an increasing trend toward use of approaches such as these to more effectively optimize the integrated contractor/customer process.

6. Paperwork Reduction Initiative

Vice President Gore is spearheading an initiative to significantly reduce by the year 2000 the paperwork associated with DOD procurements. Parametrics and the delivery of comprehensive electronic proposals each offer enormous paperwork reduction benefits. Parametrics do so because there is no detailed Basis of Estimate support required for parametric proposals; nor are detailed estimates necessary. Electronic delivery of cost volumes is also occurring. This provides far more complete and detailed information on costs than hard copy proposals while dramatically reducing paperwork.

5. Lightning Bolt #10 – Compressed Cycle Time

DOD’s Lightning Bolt #10 specifies a “50% reduction in the amount of time to award contracts that meet our customers’ needs.” This describes compressed cycle time as one detailed approach to acquisition streamlining. Cycle time is reduced dramatically when all relevant aspects of a proposal are analyzed within an integrated environment. More commonplace is the use of integrated tool sets to perform cost analysis (both grass roots and parametric), price analysis, risk identification, risk management, CAIV and LCC analysis. With this integrated approach, parametrics become one part of an overall process. Source selection is improved while cycle time is reduced. Parametrics will be forced further into the mainstream as the ability to facilitate attainment of this initiative is demonstrated.

Commercial Practices

Purchasing commercial parts, reducing RFP specificity and input, buying rather than building, and using commercial-off-the-shelf (COTS) software are all examples of applying common commercial practices to Government procurements. Commercial parametric estimating models (COTS software) can be licensed as an alternative to building models internally. Products that assess risks, perform risk management, and conduct proposal analysis can also be licensed instead of built and maintained internally. Compared to the cost of creating and maintaining these products, a COTS purchase is far more economic. Given the quality of COTS software available on PC platforms, the trend toward COTS will undoubtedly continue.

3. Electronic Proposals

Originally, hard-copy cost volumes were submitted as part of Government proposals and Government analysts used calculators to perform checks on cost realism. About 20 years ago, Government RFPs began requesting submission of cost volume data electronically using ASCII files. With the advent of ASCII file submission came huge demands upon contractors who now had to write output to comply with each specific RFP – a time-consuming, expensive and dissatisfying process. More recently, Excel data, then Excel models, began to be specified. For the most part, neither the Government nor industry has been truly satisfied.

Contractors must now dynamically reconcile internal pricing systems with the electronic submission environment, thus adding extensive effort to the proposal process. Government source selection teams find that the spreadsheets they request do not fulfill all their needs, and they must develop and validate new spreadsheets as demands require them.

The Government has recently had great success using PPAS, a COTS tool, as the electronic proposal tool. PPAS allows contractors to create and use their own specific pricing structure while still delivering proposals to the Government that are normalized to Government needs. Contractors may use their exact pricing structure and need not concern themselves with reconciliation of two systems. Government receives all contractor cost and pricing data in an environment that strengthens the ad hoc analytical environment so typical of source selections. At the same time, the Government has the ability to review all contractors on a normalized basis.

Prior to success of PPAS by one agency, the Government had sought an alternative to spreadsheets. After years of work, Government and industry established an Electronic Data Interchange (EDI) standard, EDI Format 805, for passing cost volume data. RFPs are now being prepared offering contractors the choice of either EDI Format 805 or PPAS. This enables contractors to select the approach which best suits them while still offering to the Government all the advantages of PPAS itself. This balanced approach is yet another example of Government and industry working together to define and implement a process that works for everyone.

2. IPTs

Integrated product teams are permeating virtually every facet of the acquisition arena. Individual aspects of the acquisition process, e.g. program management, incorporate IPTs. We are just beginning to witness IPT-type tendencies across the acquisition process. Estimating, proposal pricing, risk and trade analysis, project planning, project management are all individual elements of a comprehensive acquisition analysis process.

Just as IPTs are being used to improve individual processes, so must we seek to optimize the entire global system of interaction between Government and industry. The Government's needs cannot be satisfied while contractors are negatively impacted, and contractors cannot seek to improve their position at the expense of the Government. Given the same level of cooperation

across the acquisition arena as has been achieved in program management, we are now in a position to approach optimization throughout the entire acquisition domain without sacrifices of consequence from anyone.

1. I Said So

The value of my personal input does not derive from involvement with any specific acquisition activity, but rather through ongoing interaction with dozens of contractors and customers each month. From this macro perspective, it is apparent that industry abounds with stovepipes. As noted frequently above, this is bound to change. Why? Parametrics are being mainstreamed, integration is increasing across the board, use of commercial products is becoming more commonplace, and Government and industry cooperation is increasing.

Tendencies

There are a number of tendencies that recur within these 10 reasons. These tendencies lead to a better understanding of the future. Contractors, Government and individuals within these organizations all can learn from these tendencies. Below is a brief discussion of each tendency and the overall implications.

Mainstreaming

Acceptance and the use of parametrics in many industries and across new functions shows that the mystique of parametrics is disappearing and allowing the true value of the concepts to become apparent. As with all technology; when the mystique is eliminated mainstreaming ensues.

The conference we are attending combines ISPA, the only focused parametric society, with SCEA – an indication in itself that even we are beginning to realize that parametrics is just another estimating technique. DCAA is cooperating with contractors by auditing parametric proposals. DOD is endorsing the process. CAIV and trade analysis, ever more common RFP requirements, are being accomplished through integration with parametric tools. Overall, parametric estimating is taking on a broader role within many organizations and will continue as long as the mystique is downplayed and the value within the mainstream is emphasized.

Increasing Integration For All

Mainstreaming will continue as parametrics integrate further into the proposal pricing, risk and trade analysis process and as electronic interaction between contractors and Government expand. This has already begun in the proposal environment. Proposals are currently being delivered to customers electronically thus linking contractor team members together and teams to the Government. Soon, stovepipes will be eliminated within organizations in favor of true enterprise systems, and analogous integration concepts will continue to strengthen integration between contractors and customers.

Commercial Products Becoming More Commonplace

Parametric models have been available commercially for years, and most major aerospace companies license them to supplement in-house estimating processes. Proposal pricing and risk management tools too are following this path. As COTS technology continues to become stronger, broader in capabilities and more integrated, the pressure on costs and streamlining will continue to increase the use of COTS software.

Increasing Cooperation

Government and industry are partners to the extent that they recognize that improvements to the process must involve interaction between them. Many people are beginning to realize that the optimal solution is one that optimizes the process of Government and industry interaction even if it means a “somewhat” sub-optimal solution to each party. Electronic proposals are a perfect example of this process in action. While no one gets precisely what is desired, each party receives the majority of their desires. Continued cooperation of this type will result in refinements and improvements regarding electronic proposals as well as in other areas.

Risk management is another area moving toward greater cooperation. Industry has traditionally kept risk concerns within its own organizations, reluctant or unwilling to share the risks for fear of impairing their position in a bid. Government is now rewarding up-front risk management plans, and industry is beginning to become more comfortable with the process.

So what does this mainstreaming, integration, commercialization and cooperation mean? From a contractor’s perspective, the message is -- cooperate with customers. Work with your customers to the extent they are encouraging industry input and cooperation. For Government, the message is -- honor the contractor's trust. If contractors are expected to be open and cooperative, the information you receive in this context must be treated with respect and used in accordance with agreed-upon expectations. As an individual, the message is -- integrate. Technology has changed; stovepipes are no longer necessary. Facilitate cooperation and integration or get left behind.

Conclusion

The acquisition process of the future is bound to embody both parametrics and grass roots estimates. Parametric proposals with risk management components will be requested more frequently and will become more commonplace. Effective proposal pricing tools will integrate the best of each of these elements within a single proposal and will allow for utilization of each without the other if preferable. Proposal cost volumes will continue to enhance management’s decision-making capability. They will, further, address the customer’s needs to an increasing extent. Continued use of electronic proposals will provide source selection analysts cost volume data in a meaningful format and at a level of detail optimized for source selection analysis.

No longer will the success of parametric estimating be judged on its own merits alone. The days are gone when parametric estimators were successful by merely gaining recognition for the concept. Parametric estimating is now positioned as one element in an exciting new integrated estimating, pricing, and risk management environment.

The next decade will be an exciting time to be a part of this industry. Those that survive will understand what is happening in the industry and work to be a part of it. The future will certainly be different. The question is how will you and your organization adapt?