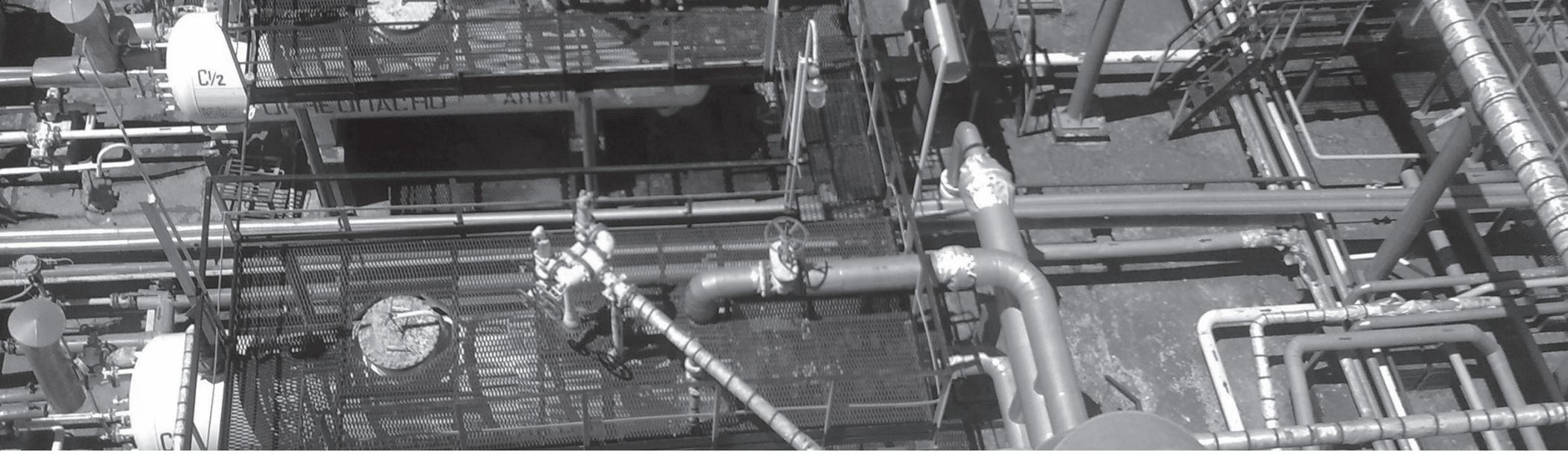


5 Best Practices In Capital Project Estimating for the Process Industries



Introduction

As Engineering, Procurement and Construction firms (EPCs) around the world face the reality of fewer and smaller projects that are out for bid, achieving higher win rates has become a critical success factor for growth. The key to winning more bids in this competitive environment, without introducing undo risk, lies in changing the way you approach the process of estimating.

Leveraging a combination of industry best practices and purpose-built software will allow you to create accurate bids quickly, reduce risk, and be more responsive to the evolving needs of your customers.

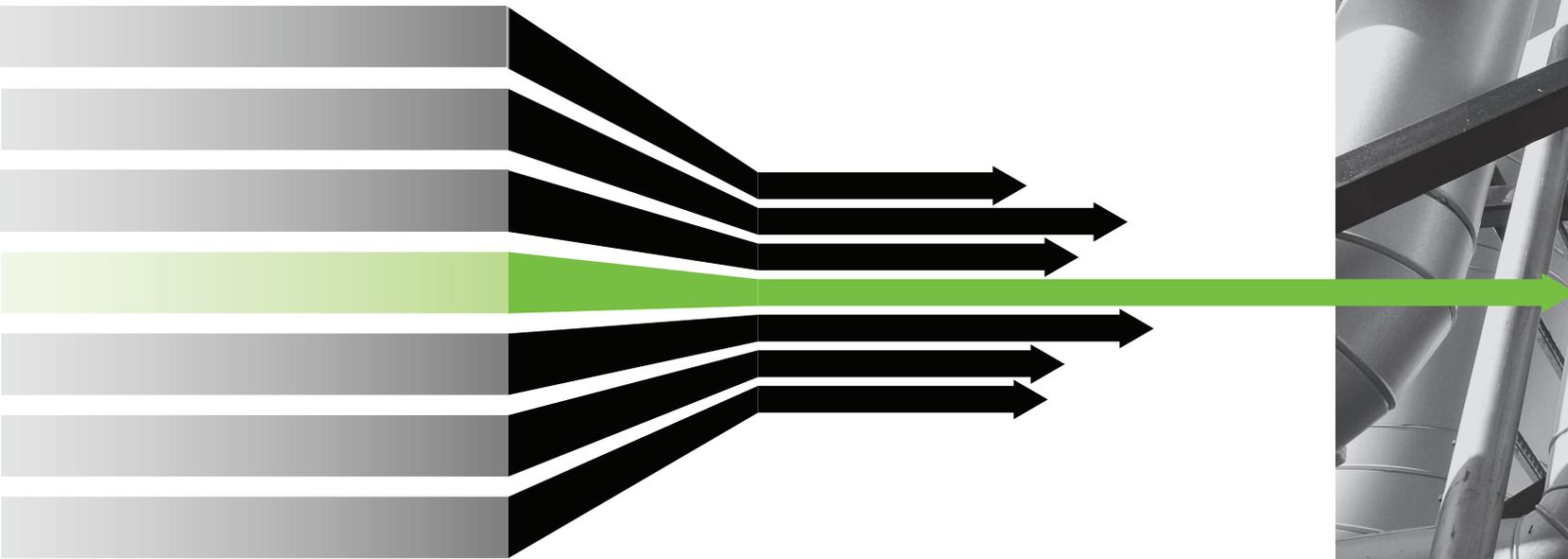
Read on to learn how you can:

- Produce more accurate estimates
- Reduce risk
- Accommodate project changes

And you can do this all while reducing bid preparation time by as much as 50 percent.

1| Use estimating to gain a strategic advantage

The estimating game is not for the faint of heart, and today, the stakes are higher than ever. Fewer projects means your bids must be competitive. But underbid and you put your firm's welfare at risk. And yet, these same realities present an opportunity. Evolve from using manual, error-prone spreadsheets to purpose-built estimating software with an embedded cost engine and you'll improve your bid accuracy while protecting your margins. Intelligently re-use previous estimates and actual costs to shorten cycle times and bid on more projects. And, incorporate model-based project costing to respond to the inevitable project changes faster and build goodwill and confidence with your customers.



2| Understand your organization's level of estimating maturity

According to Ernst & Young, 65% of large capital O&G projects were over their post FID budget, by an average of 23%. How did we get here? Chances are, your firm's success in estimating has a direct correlation to your level of "estimating maturity". Having a common internal understanding of your maturity level will help you determine where to invest to advance your maturity and improve outcomes.

Level One | Using spreadsheets for estimating. Sheets are not connected to the evolving design and are typically siloed. The team works sequentially and any change in scope or design causes major challenges, delays and potential errors.

Level Two | Model based estimating from conceptual design through FEED. Estimates are based on design models and can be updated when there are changes. The estimate is consistent across parties/departments involved in its development.

Level Three | Common estimating platform across project lifecycle. Estimate becomes richer and more accurate throughout detailed design and construction.

Level Four | Estimating integrated with control, scheduling, procurement and construction. Procurement for long-lead-time items can begin early, preventing delays. Actual costs are tracked against planned for identifying trends and refining future estimates.

Maturity Model in Economic Evaluation

1| Spreadsheet-Based Estimating

2| Model-Based Estimating for FEED

3| One estimating platform across the lifecycle

4| Estimating integrated with control schedule, construction & procurement

3| Use of a Common Cost Model

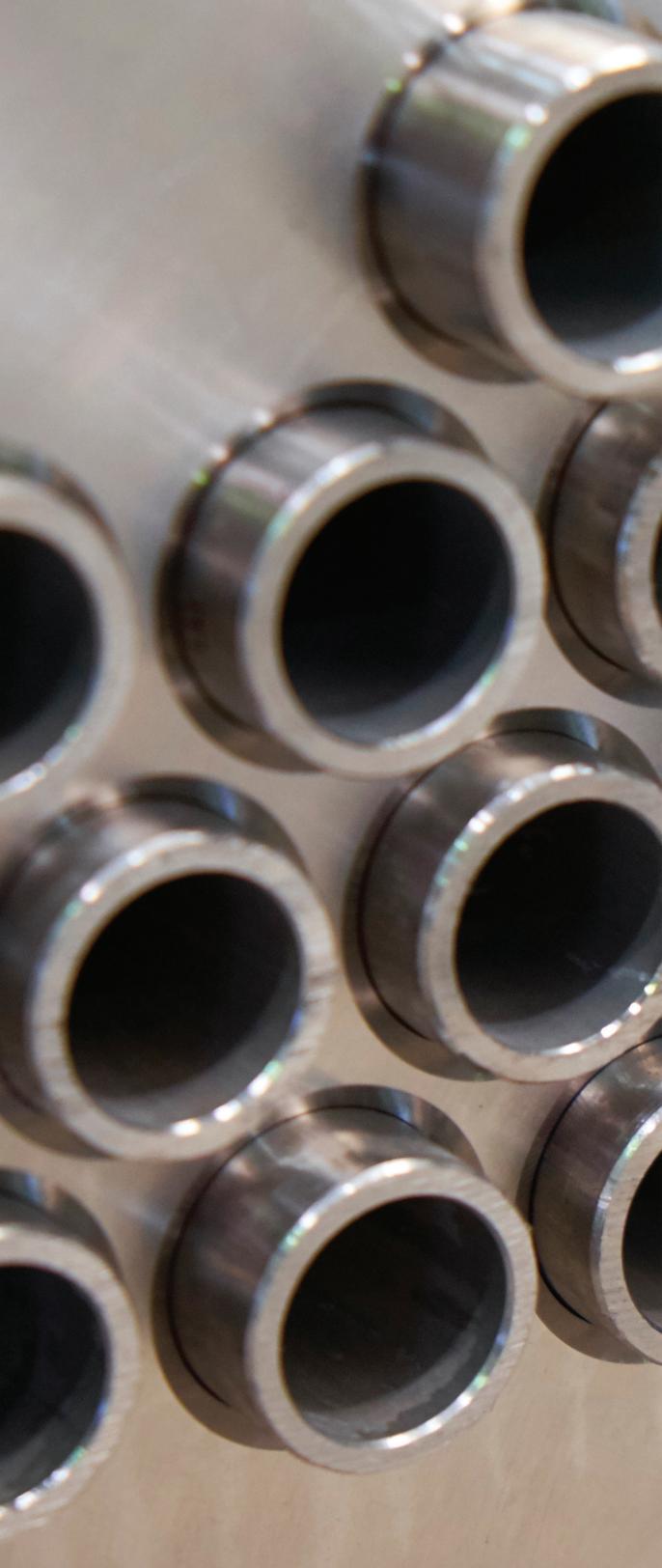
In the bidding phase, the process model can generate the early estimate, leveraging templates provided by the estimator. During FEED, the estimate is further developed using the same cost model created for the bid. Process, equipment and safety engineers work together, simultaneously, to develop the design. The estimators work in parallel to the design process developing and refining the estimate as the design progresses from conceptual through FEED. The design team and the estimators all use the same, consistent project information as the design and estimate evolve.

Benefits of using the common cost model approach include:

- More quickly and easily incorporate the inevitable scope/schedule changes into the estimate
- Ability to further develop the cost model during the detailed design phase and construction phases
- Support for early procurement activities on long-lead-time items

The one thing you can count on when developing an estimate is change. There will inevitably be changes in the project scope and timeline. If you are among the one-third of companies that rely on spreadsheets for compiling your estimate, you will expend significant extra resources to accommodate these “moving target” changes and are more likely to introduce errors.





4| Re-use of estimates

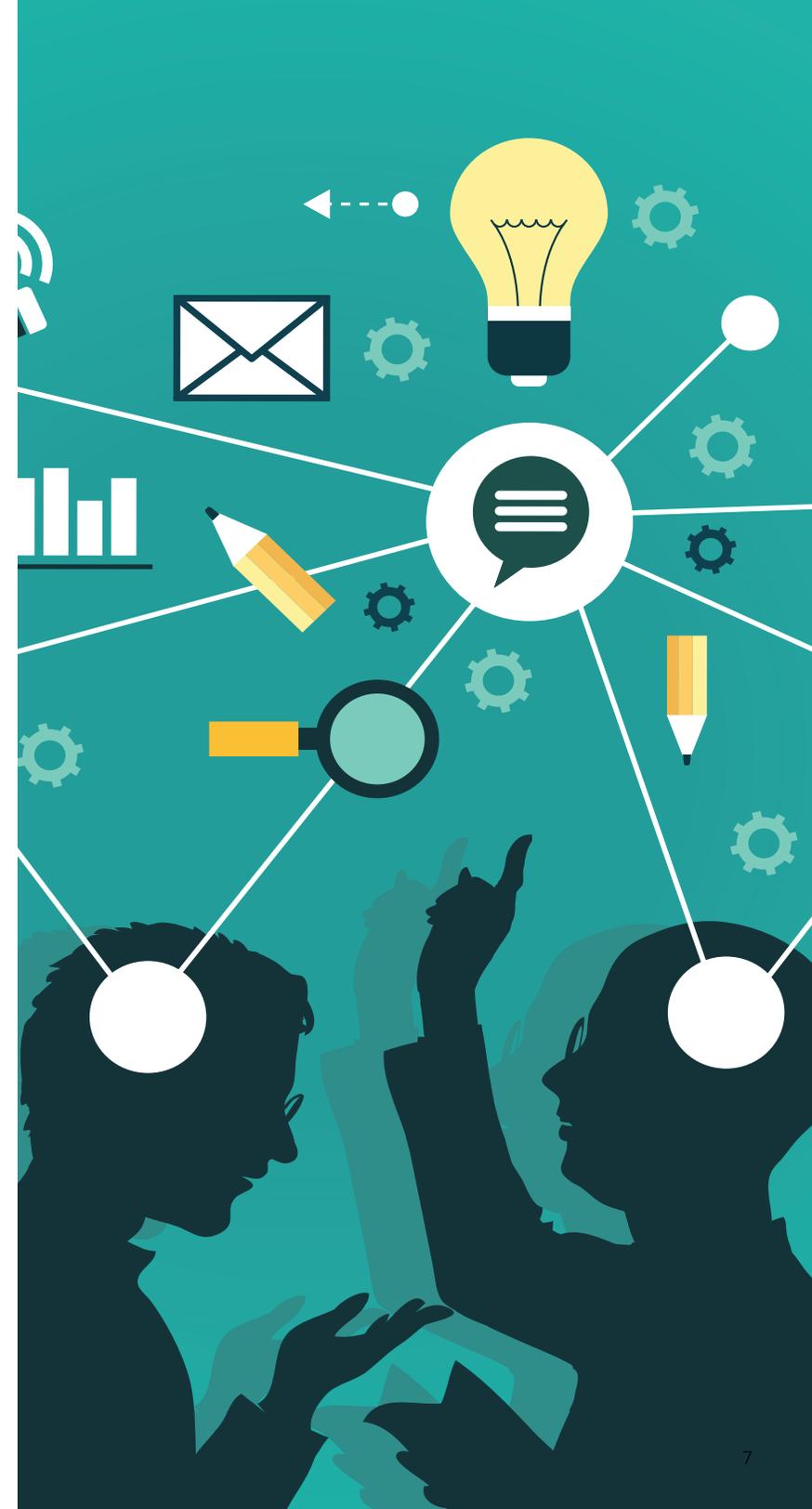
A well-organized library of previous designs, actual costs and previous estimates can cut your bid time down substantially. These former deliverables essentially contain your firm's accumulated knowledge and experience when it comes to project estimating and procurement. Being able to quickly ascertain the relevancy of previous project estimates and update them for changes in materials pricing, labor and facility location allows your firm to bid more jobs while reducing bid and project execution risk.



5| Collaboration and Transparency

EPCs are hesitant to share proprietary cost and procurement information as it often is the source of competitive advantage. Owners often understand these constraints and consider them reasonable. Likewise, the EPC needs to understand that scope and schedule changes are inevitable and that early insight into potential changes can help them adjust and prevent wasted effort while delivering the best estimate for the project. With a shared goal of having timely, accurate cost data to support better decision making, bid preparation and project execution, joint use of an estimating software package can enhance communication and transparency across the internal and external project team.

At a recent industry estimating forum, a blue-ribbon panel of owners and EPCs agreed that both parties would benefit greatly from improved collaboration and transparency during the bid process. Early exchange of estimate information across parties supports the shared goal of getting the most accurate estimate as quickly as possible. Use of a written estimate plan can prove especially effective for this, but the parties need to fully understand and adhere to the plan to realize these benefits. Interested in learning more about how companies like Technip, S&B and Linde have turned project estimating into a strategic advantage?





Summary/Next Steps

Agility and efficiency are more important than ever in today's bidding and estimating environment. With model-based costing from AspenTech, you gain the ability to quickly and efficiently produce accurate bids to win more work. Also, you can more easily accommodate changes in scopes and schedules to stay on track, protect your bottom line and improve customer satisfaction.

We not only provide a common model for early design, engineering and costing, but we also help you draw on and update your own proven designs and estimates to enable you to decrease the time and effort required to generate new bids while reducing risk.

Contact Aspentech today www.aspentech.com/EPC to learn how you can...

- Avoid the errors and delays associated with manual, spreadsheet-based estimating.
- Shave 50% off the time it takes to produce an accurate estimate.
- Reduce variances between estimates and actuals.
- Connect your estimate to project controls software for consistent tracking and reporting.

AspenTech is a leading software supplier for optimizing asset performance. Our products thrive in complex, industrial environments where it is critical to optimize the asset design, operation and maintenance lifecycle. AspenTech uniquely combines decades of process modeling expertise with big data machine learning. Our purpose-built software platform automates knowledge work and builds sustainable competitive advantage by delivering high returns over the entire asset lifecycle. As a result, companies in capital-intensive industries can maximize uptime and push the limits of performance, running their assets faster, safer, longer and greener.

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