

Business Standard

Tips to achieve best practice across the capital project lifecycle

With right IT tools, project managers can manage uncertainty and risk involved in an engineering & construction project, and also keep in check capital costs

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Fierce competition in the engineering and construction (E&C) industry is the lifeblood for driving excellence and innovation. Owner-operators continue to demand best value bids, but design quality and experience takes precedence over simply low prices. With increasing globalisation, engineering contractors can only thrive by delivering project proposals faster, adding superior design value and providing differentiating services to survive. E&C companies must also be flexible to manage change by utilising skills and technology to serve as a reliable partner for their oil and gas clients.

So, how can E&C contractors survive and thrive in the bid to win contracts? Managing risk and project changes is a fundamental part of business. Projects rarely run smoothly without some form of alterations. Coping with unforeseen events and reducing the impact on costs, resources and materials is essential to add value when large oil and gas companies need E&Cs to mitigate expensive delays or production issues. E&C firms should see their role as an integral component of the oil and gas sector. Adopting best practices builds better bids and achieves improved economics across the lifecycle of capital projects to enhance decision-making.

Buyers and bidders: The relationship between success and failure

The relationship between buyers and bidders is vital to the success of the construction industry. On the one hand, for owner-operators it is like a 'buyer's market' today with the insistence for greater support from their construction service providers and the desire for the lowest price bid on contracts. However, on the other hand, the need for quality design-to-build bids is paramount. The bidding environment for owner-operators should not always be about low cost as this strategy does not guarantee best value.

Success and failure on a bid can be due to many different reasons. However, too many contractors fail to evaluate and calculate the real projects costs. It is essential to accurately include all overheads, risks and jobs costs and not under estimate a project. In contrast, over estimating a contract can equally be detrimental to winning a bid. Working more effectively and improving the bottom line can be achieved by integrating every step within the profit cycle. Greater precision and predictability built into a job means E&Cs can be flexible, reliable and efficient throughout the lifecycle of a project.

Costs are rising faster than the price of oil, so if projects cannot be economically managed, they will be delayed or cancelled. According to a survey by PwC on the Capital Projects market in the Middle East,

“80% of respondents said that their projects had experienced a delay, with 46% saying that they had suffered significant delays – in excess of six months. Completing projects on budget was also a significant issue, with only 36% of respondents saying that their projects were completed on or under budget.

Achieving best practice in the bid to win

Whether to handle large scale projects or smaller types of work, being a preferred E&C supplier helps to gain an advantage in the bid to win contracts. Establishing the disciplines of commercial differentiation allows an engineering company to keep ahead of the competition and build stronger, long-term relationships with owner-operators.

Today, there is a need to prioritise the most effective economic projects and strategies to pursue in advance of any capital expenditure. Cost estimators must gain better visibility and understanding of costs early in the project lifecycle to identify problem and risk areas and prepare more effectively. For E&Cs, an integrated workflow approach involving all engineering disciplines in the conceptual design phase is critical to achieving an optimal economic decision. In addition, the selection of the right software tools will provide flexibility to meet commercial challenges.

Best practice for achieving superior cost results includes key characteristics as:

- Use of the same software between the owner-operator and E&C, especially when employed with a transparent software system, the scope and resource requirements are clearly communicated between owner-operator and E&C. The owner uses this to evaluate bids on a ‘like for like’ basis and ensures that all requested scope is included
- Employ an estimating system that can be integrated with the process modelling environment and FEED deliverables software. This approach enables rapidly re-evaluating the estimate based on conceptual engineering changes, ensuring project change management consistency
- Employ the same estimating platform from pre-feasibility through detailed estimating. This approach can help improve the estimator’s productivity by up to 80%

E&C companies that adopt integrated project modelling techniques and build flexibility into their risk management or project changes will help oil and gas companies. In doing so, this can provide enormous value to their clients and support large scale projects more effectively. When an E&C firm helps reduce the cycle time of an oil and gas well development project by a significant amount (ie, 20-30%), it can help their client deliver results far more quickly.

Economic evaluation software makes life easier



Sunil Patil, senior principal business consultant, APAC, AspenTech

One of the biggest challenges in the industry today is that the process engineer is increasingly asked to achieve more than traditional process modelling and calculations. Achieving optimised design versus a number of design objectives presents issues, which include several changes during the conceptual design and basic engineering process. E&Cs do have opportunities to win contracts from government and private ventures.

The challenge is being able to productively manage regulation, procurement strategies and shifting global market trends. An additional industry issue is the major fall-out from the industry turbulence, which has created a skills shortage that is stifling progress in the shadow of many veterans who are soon to retire. This

‘knowledge gap’ is a result of an under investment in quality training and talent development. Companies that invest in developing the necessary skills capacity, think strategically and execute efficiently today will survive. Consistent and effective training also improves process and profitability and should not be looked upon as an expense, but more of an investment.

With integrated engineering software, engineers and project managers can support business demands by having the necessary tools to make the trade-off between process yields, reliability, energy use, capital and operating cost without compromising quality or incurring unnecessary costs. Advanced software technology plays an important role in helping to provide integrated engineering tools to produce safe, accurate and efficient designs. Such tools deliver easy-to-use, enhanced capability and embedded knowledge, which supports collaboration and equips the next generation of engineers to quickly add value to projects and comply with standards. Therefore, moving away from traditional cost estimating tools like Excel is essential in the quest to win a bid.

Next step: Effective decision-making

The E&C industry is rapidly changing and so too is the nature of complexity within the business. Customer demands are on the increase, so being able to adapt strategy and equip engineering expertise with cutting-edge economic evaluation software platform throughout the engineering cycle will help to capitalise on project opportunities. By providing cost estimators and project managers with the right tools, project uncertainty and risk can be reduced and capability is enhanced for effective decision-making to control industry capital costs. In the quest for bid-to-win contracts, better and faster designs mean better value for customers, which underpin a successful strategy for E&Cs to survive and thrive in a rapidly developing market.