Project Management Institute.
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# *Are You Receiving Realistic Bid Proposals?*

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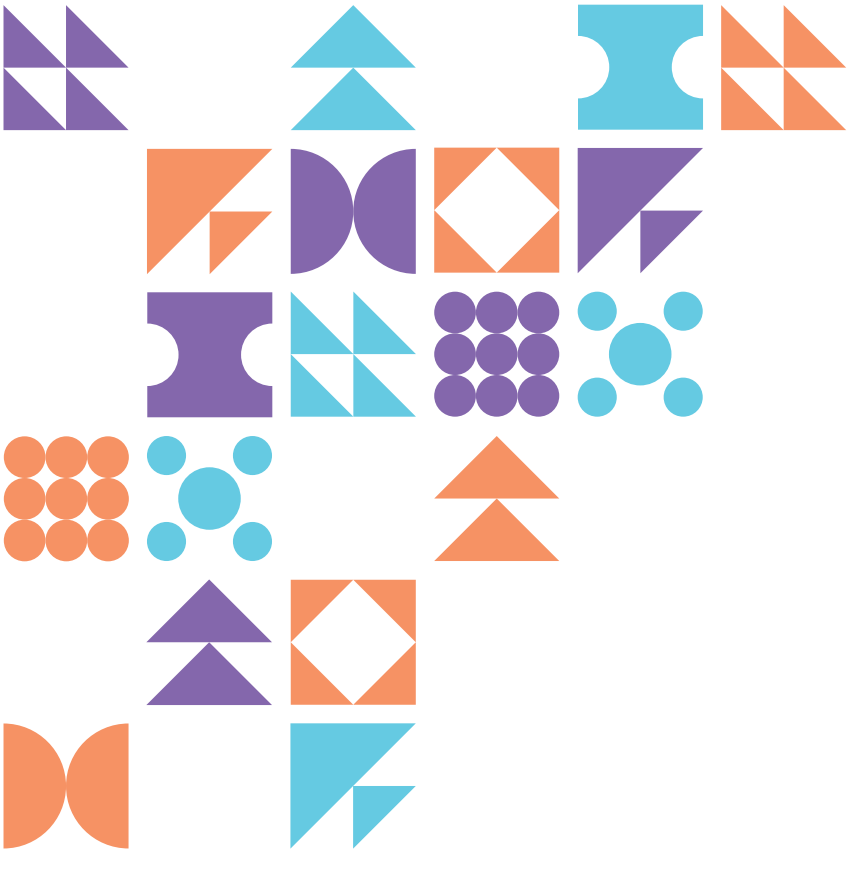


## *Abstract:*

Cost escalation during the bidding phase of various types of projects is a critical issue that can result in substantial financial losses, project delays, and dissatisfaction among stakeholders. This paper examines the primary causes of cost escalation specifically to projects in the bidding phase, including market volatility, contractor limitations, the quality of bidding documents, time constraints, limited competition, and stringent contractual obligations. Citing industry statistics and case studies, it highlights the profound impact of these factors on project viability. Furthermore, it presents practical strategies for mitigating these risks, empowering stakeholders to make informed decisions. By tackling these challenges, projects can enhance its resilience against cost fluctuations and ensure project delivery aligns with budget expectations

## *Introduction*

Have you worked in a project where you and the team ended up with bid proposals that exceeded what you estimated it to be? Have you wondered what could be the causes that went unseen and what strategies you can you implement to effectively mitigate the risk of receiving un expected bid proposals, particularly in volatile markets and specialized industries?  Capital cost escalation and project cost overruns are a pervasive challenge in world of projects, often ranging from 10% to 30% of original estimates. The volatile nature of material prices, geopolitical factors, and fluctuating demand contribute significantly to this phenomenon. According to Turner & Townsend, the global construction cost inflation rate was approximately 4.6% in 2022, a trend mirrored in the oil and gas sector.

The risks of escalation are unescapable, and many cases can be studied and catered for during the development of project design. As Project Management Institute (PMI) classifies the types of risk in Project Management Body of Knowledge standards book (PMBOK), the teams may account for Known Unknowns risks in project contingency reserve. However, unidentified risks, referred to as Unknown Unknowns which cannot be anticipated beforehand could be very damaging and be one of the main contributors to calling a project off. Management Reserves often used to cover these types of uncertainties especially when a contract is already awarded. Our goal here is to focus more on addressing the Unknown Unknown that contribute to receiving higher bids that what the team estimated.

This paper explores how cost escalations manifest in direct costs (e.g., labor hours, materials), indirect costs (e.g., project management), contingency allocations, and profit margins during the bidding process. Understanding these elements is crucial for project managers, owners, and contractors to effectively manage risks and enhance project delivery in this highly competitive environment.

## *Key Causes to Bid Escalation*

Risk sources can be categorized in two fundamental ways: internal and external. Internal sources refer to risks that arise from within the organization, which are typically manageable and subject to company control. For instance, an overwhelming workload may jeopardize timely project completion, leading to potential delays. In contrast, external sources stem from factors beyond the company's influence, such as market dynamics. A prime example of this is currency fluctuations, which can result in significant financial losses that the company cannot directly mitigate. Understanding these distinctions is crucial for effective risk management strategies (Alquier, et al., 2000).

## *Overloaded Market*

An overloaded market occurs when demand for construction services exceeds supply. This can lead to significant increases in direct costs. For instance, labor costs can rise sharply as companies compete for a limited pool of skilled workers, particularly in regions experiencing a boom in economical improvements. In 2021, the Energy Information Administration noted that 70% of contractors faced challenges in securing skilled labor, resulting in a median increase in labor costs of around 5% to 10%. Additionally, volatile material costs, such as steel and specialized equipment, can escalate; in the oil and gas sector for example, the price of certain drilling components surged by over 200% from 2020 to 2022 (AGC, 2021). This environment can create unsustainable cost structures, jeopardizing project viability.

## *Contractors Capacity and Capability*

It is very important to keep in mind that Contractors and any business owner will not be able to sustain a large number of employees (of all disciplines) idle especially those skilled in uncommon specialties whom their hourly rate is a lot above average. Contractor capacity limitations are particularly pronounced in the oil and gas sector, where specialized skills and equipment are often required. When contractors are at full capacity, they may need to subcontract work at premium rates to fulfill project demands. According to the Construction Industry Institute, about 30% of oil and gas contractors turned down projects due to capacity constraints. This situation can lead to a bidding environment where remaining contractors inflate their bids to account for the risks associated with potential delays and resource shortages. Such inflation not only impacts direct costs but can also affect project timelines, complicating logistics and regulatory compliance.

## *Design Quality*

The quality of the tendering package is critical, especially for those in the oil business where projects often involve complex technical requirements and regulatory considerations; the same principally applies on various types of projects with different complexities. A poorly defined scope of work as well as tendering package can lead to significant misunderstandings, prompting contractors to include higher contingency amounts in their bids to cover perceived risks. In addition, teams may elect to defer some of the design issues to construction to have more clarity on what needs to be done, yet, transferring such risks to contractor's com with a cost. A study by the Project Management Institute found that 37% of oil and gas projects suffer from scope creep due to unclear specifications, resulting in an average cost increase of 15% (Larson, 2009). This not only inflates direct costs but can also escalate indirect costs related to project management, quality assurance, and compliance with environmental regulations.

## *Inadequate Bidding Period*

Some projects get issued in urgent basis, and some others adopt different types of acceleration frameworks. Project teams handling projects in similar cases usually lean toward minimizing the bidding period. Insufficient bidding periods can aggravate the escalation in bidders' proposals, where the complexity of projects often requires thorough evaluations. When contractors feel rushed, they inflate their bids to hedge against uncertainties. The AGC reported that 40% of oil and gas contractors felt pressured during the bidding process, leading to bid inflation and inaccuracies (AGC, 2021). Consequently, contractors may build higher contingencies into their bids, directly affecting both direct and indirect costs. Moreover, a rushed bidding process can stifle innovation, as contractors may not have adequate time to explore alternative solutions that could reduce costs or improve project outcomes.

## *Limited Pool of Bidders*

One of the main ways to increase competition in activity is to increase the number of participants.  Number of bidders can significantly affect the competitiveness of the bidding process. Research indicates that projects with fewer than three bidders often see 10-100% price increases and in some instances even more. The unique challenges associated with oil and gas projects—such as regulatory compliance, environmental assessments, and technological requirements—can deter potential bidders, leading to a lack of competitive pressure. This scenario can cause contractors to inflate their profit margins, knowing that they are less likely to face competition for their services. Furthermore, this lack of diversity in bidding can hinder innovation and drive up costs across the board.

## *Stringent Contracts Terms & Conditions*

It is may be a rule of thumb; the more you ask the higher the price will be. Stringent contract terms are particularly prevalent in some industries such as oil and gas, where regulatory compliance, safety standards, and risk management play crucial roles. According to the National Small Business Association, 40% of small contractors avoided bids due to the substantial contract conditions. These stringent requirements can create barriers to entry for smaller firms, leading to fewer bidders and increased overall project costs. Larger contractors, who can absorb the risks associated with stringent terms, may inflate their profit margins, further exacerbating cost escalation. Striking a balance between robust risk management and encouraging broad participation is essential for maintaining co
mpetitive pricing.

## *Level of Risk Modeling*

Risk Assessments are usually done before approaching the market, and it is done in many phases and before any decision is made. However, in many cases owners or sponsors decide to proceed forward with waiving some of clear-cut uncertainties. It is very important to consider risk assessments and not to disregard its recommendation, otherwise, escalation will then be a definite. To effectively assess the level of risk associated with cost escalation, a high level but comprehensive model can be developed by the project team. The model needs to incorporate quantitative and qualitative factors specific to the sector to evaluate risk levels systematically.

## *Risk Assessment Model Components*

Experienced project managers often rely on rules of thumb to check their estimates, but a more formal validation may be required (Pillai, 2008). Various factors in construction projects that feed into above key causes and those need be carefully studies and fed to the risk model proposed below: aggressive schedules, unrealistic fast-tracking concepts and unforeseen site conditions.

## *1.Risk Factors*

***a.Market Demand:*** Analysis of current market prices and competition for resources.

***b.Contractor Capacity:*** Assessment of the availability of specialized contractors and their willingness to participate in bidding.

***c.Tendering Package Quality:*** Evaluation of the clarity and detail in project specifications, including technical and regulatory requirements.

***d.Bidding Period:*** Duration of the bidding process and its adequacy for thorough evaluations, considering project complexity.

***e.Number of Bidders:*** Count of bidders participating in the process and their competitiveness in the oil and gas sector.

***f.Contractual Terms:*** Complexity and stringency of contract terms that affect contractor participation.

***2.Scoring System***

***Each risk factor can be scored on a scale of 1 to 5:***

1: Very Low Risk
2: Low Risk
3: Moderate Risk
4: High Risk
5: Very High Risk

***3.Weighting***

***Assign weights to each factor based on its impact on overall risk. For example:***

-Market Demand: 30%
-Contractor Capacity: 25%
-Tendering package Quality: 20%
-Bidding Period: 10%
-Number of Bidders: 10%
-Contractual Terms: 5%

***4.Risk Level Calculation***

***The overall risk level can be calculated using the formula:***

Total Risk Level = ∑ (Score X Weight)

***The resulting score can be categorized as follows:***

1.0 - 1.9: Very Low Risk
2.0 - 2.9: Low Risk
3.0 - 3.9: Moderate Risk
4.0 - 4.9: High Risk
5.0: Very High Risk

Stakeholders in the field of project construction can utilize this model at the beginning of the bidding process to identify potential risk levels. By systematically evaluating each factor, they can develop targeted strategies to mitigate the identified risks. For example, if the model indicates a "High Risk" level due to insufficient bidding periods and limited bidders, stakeholders might choose to extend the bidding timeframe and actively seek more participants.

## *How to Avoid This Risk*

Now that you are able to assess and evaluate each risk, a high-level strategy is explained in this section for addressing each of the key causes.

First, conducting thorough market analysis can help stakeholders anticipate fluctuations in direct costs, such as labor and materials. This proactive approach enables more accurate budgeting and bidding strategies, reducing the risk of cost overruns. Continuous monitoring of market trends and supply chain dynamics is essential for informed decision-making. After studying the market, it may be more feasible to just defer the project to a later time where more competitive environment is seen on the horizon.

Second, engaging contractors early allows for better assessment of their capacity and willingness to participate in bidding. Understanding current commitments and resource availability can lead to more competitive bidding and accurate cost estimates. Building strong relationships with contractors can also facilitate resource sharing and collaboration.

In addition, providing clear, detailed, and well-structured project specifications minimizes ambiguities. High-quality tendering packages can reduce bid cost variability by up to 20%, leading to more accurate direct cost estimates and lower contingency allocations. Detailed tendering packages should include all type of technical specifications, safety requirements, and compliance guidelines. Most importantly, minimize the grey areas, and simply be clear of what you want the contractor to do for you. On the other hand, one aspect that might end up be very destructive is the selection of the design team. It is very crucial that the design team is carefully selected, and a systemic way of monitoring and controlling the changes are in place and strictly followed.

Fourth, allowing for a longer bidding period can reduce the need for inflated contingencies. A study indicated that extending the bidding period by just two weeks can lead to a 5% reduction in bid prices, reflecting more accurate assessments of both direct and indirect costs. This flexibility allows contractors to conduct thorough evaluations and propose different alternative. It is very important to highlight that many projects depend on the market condition, therefore, allowing bidders to explore different sources for material for instance or service providers will allow them to optimize their bids to ensuring winning the project.

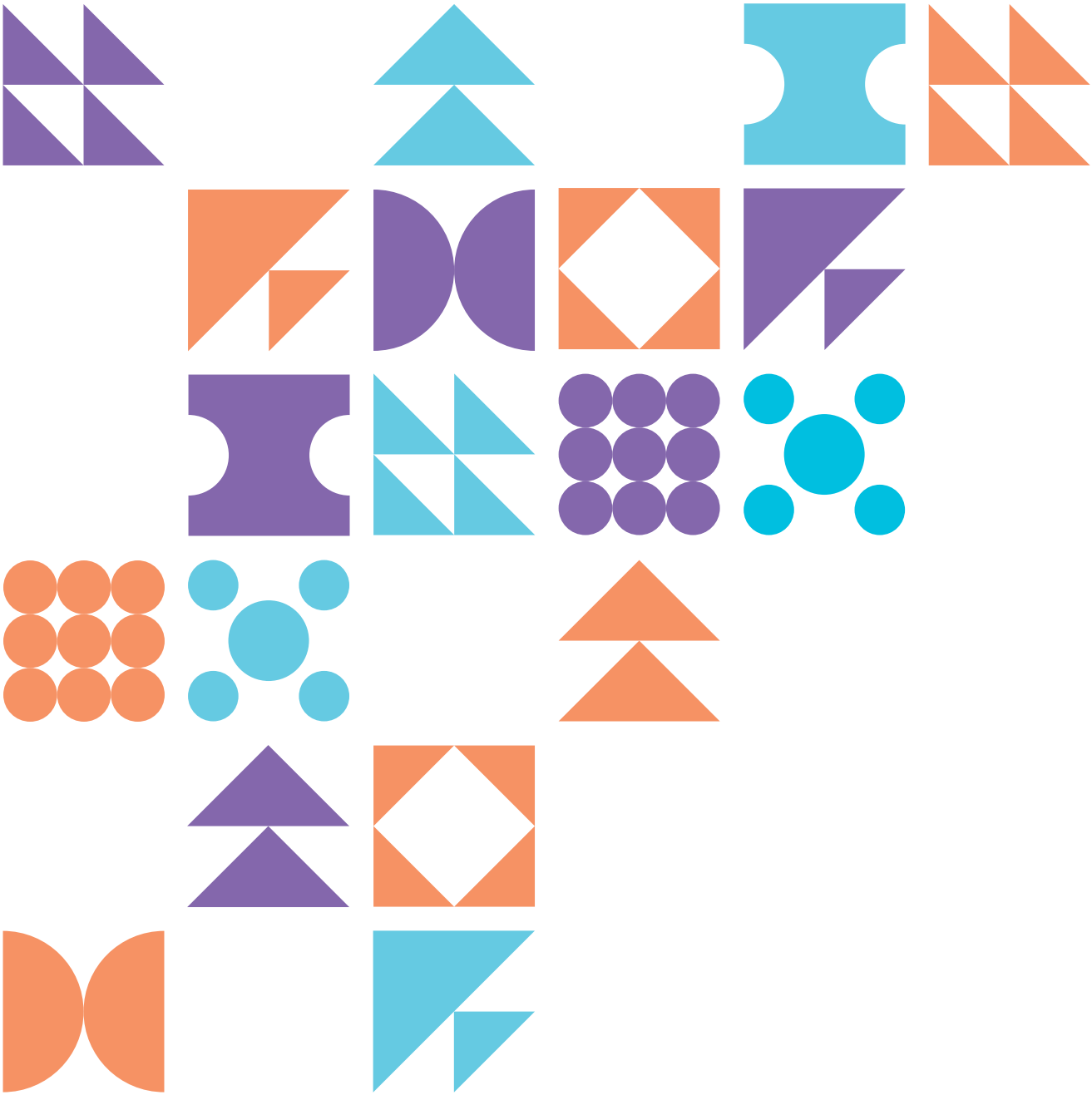
Moreover, actively seeking a diverse range of bidders can enhance competition, leading to lower direct costs. Expanding the bid slate has been shown to increase competitive pricing and lead to better overall project outcomes (Jagtap, et al.). Outreach initiatives can be employed to engage underrepresented contractors, fostering inclusivity and innovation in the bidding process. Also, introducing financial incentives is one of the methods that were proven to be effective to attract silent or non-responsive contractors.

Last strategy, streamlining contract terms can encourage broader participation and lead to more reduction in proposal pricing. Research shows that simplifying contracts can increase bidder participation by 25%, helping to keep costs down. Clear and concise contracts can facilitate better understanding and compliance among all stakeholders. Therefore, adopting international contract languages will not only help prices to decrease but also will require less time to review. Moreover, unless it is regulatory compliance, try not to restrain contractors with a specific option and let them explore the market and move with its trend accordingly.

## *Conclusion*

Cost escalation during the bidding phase is a complex issue that requires a multifaceted approach to manage effectively, particularly in specialized industries such as oil and gas. Understanding how escalations in direct costs, indirect costs, contingency allocations, and profit margins occur, stakeholders can adopt proactive strategies to enhance the bidding process. Factors such as market dynamics, contractor capacity, tendering packages quality, bidding timelines, competition, and contract terms are critical to maintaining project viability and ensuring successful delivery.

Projects, must adapt to changing economic conditions and market dynamics, ensuring that projects are delivered on time and within budget while meeting stakeholder needs. Fostering a collaborative environment and prioritizing transparency, stakeholders can navigate the challenges of cost escalation, leading to more accurate cost estimates and improved project outcomes. Addressing these challenges will ultimately enhance the industry's resilience and capacity for sustainable growth, paving the way for a more efficient and effective oil and gas project landscape.



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