

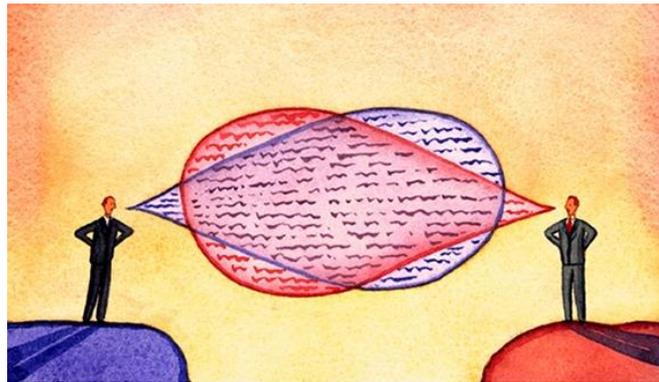
Benchmark your cost reduction strategy with the latest industry intelligence

Results of the Oil & Gas Project Cost Reduction Insights Global Survey – 4th quarter 2017

The international oil & gas industry is now relentlessly focused on sustainable cost reductions in every aspect of the business, with reducing capital project costs a high priority. The number of authorized projects is increasing, and most of these are based on estimates that are much lower than they would have been a few years ago.

All of us engaged as project sponsors and teams want to be sure that our cost reduction strategies will succeed. This is especially important today as, along with lower costs, financial stakeholders require higher confidence that these cost targets will be met.

To help meet this industry need, PennWell Corporation and Westney Consultants are collaborating on a research program to better understand the drivers of current cost trends, what the industry is doing to reduce costs, what is working (and what is not), and where the opportunities for further, sustainable cost reduction can be found. The research began with a global survey.



Participants in the 4th Qtr 2017 *Oil & Gas Project Cost Reduction Insights* survey provided a truly global view of every type of project and by all the major players. The participants work as owners, contractors, suppliers, consultants, and researchers in over 100 countries. One-third are executives or managers, and most of the rest work on projects as engineers or specialists. Their projects cover the full spectrum of upstream/midstream/downstream and range from \$10 million facilities projects to \$10 billion mega-projects.

We've organized the survey results as a diagnostic for benchmarking your cost reduction assumptions and plans. For each element of a cost reduction strategy, you'll find a summary of survey results, the authors' observations, and a suggested list of benchmarking questions you can use.

Strategy #1: Reduce cost by leveraging market trends

SURVEY RESULTS: While cost trends vary by sector, overall, the cost of a project funded today is 10 - 25% less than it would have been in 2014, and most of these savings are the result of favorable (to the buyer) market conditions. Looking ahead, the expected cost of a project funded in 2020 is likely to be 10% more than one funded today, mostly due to improving (for the seller) market conditions.

Non-market drivers of higher costs are increased environmental regulations and permitting delays, scope changes, and increased project complexity. 85% see economic and market risks as moderate to significant, most attribute this to uncertainty in the global economy.

OBSERVATIONS: As project activity begins to increase, cost increases over the next three years will be less than the decreases seen during the previous three. However, the root causes of the coming increases are locked in: increasing demand, contractor and supplier needs to recover lost margins, higher levels of complexity, and ever-increasing environmental and permitting challenges. So it is more important than ever to have cost reduction strategies that address the things we can control.

COST REDUCTION CHECKLIST #1

- Are our cost projections consistent with the industry consensus?
- Have we properly accounted for the cost or risk of potential changes in environmental regulations?
- Does our schedule reflect realistic durations for permitting?
- Do we have long-term or frame agreements with contractors, subcontractors and suppliers that will postpone cost increases? If not, can we negotiate these?

Strategy #2: Reduce cost by improving front-end planning & definition

SURVEY RESULTS: 90% of participants have a front-end development process. Nonetheless, the highest cost reduction priorities for owners are improving scope definition, reducing the number of changes during execution, and engaging contractors earlier in scope definition. For contractors and suppliers, the highest priorities are to provide owners with more realistic risk assessments, offer more “off-the-shelf” designs, and increase the skills of their project managers and teams.

OBSERVATIONS: There is an apparent disconnect between the broad use of front-end development processes, and the participant’s view that the greatest opportunities for cost reduction are found in improving scope definition and reducing changes during execution. Industry lessons learned suggest two likely answers to this paradox:

- *An owner may not be consistent or disciplined in the way front-end processes are applied due to schedule or budget pressures that can encourage short-cuts resulting in incomplete definition at authorization.*
- *A project may be well-defined at authorization and yet have a low level of organizational commitment to the scope and design. When the front-end process has failed to gain alignment and commitment from all stakeholders such as Operations, changes during execution are likely.*

COST REDUCTION CHECKLIST #2

- Are we routinely achieving a sufficient level of design maturity at project authorization?
- If we are, are we ensuring full commitment to this scope and design - or are we sanctioning one project and then building another?
- Are we making optimal use of the early, Project Shaping phase to ensure full consideration of scope and technical alternatives?

Strategy #3: Set project budgets to achieve lower costs

SURVEY RESULTS: Only 20% of respondents set budgets at the 50/50 probability point. 40% say they fund projects at lower, “aggressive” target cost levels, (these projects are typically <\$500M.) 40% fund projects at higher levels to avoid supplemental funding, (these projects are typically >\$5billion.)

60% say that bias to optimism and overconfidence has a significant impact on the project approval process. Most respondents use internal and/or external third parties to validate their cost estimates and schedules, particularly if the project is large and/or of strategic importance.

OBSERVATIONS: *Industry practice for a portfolio of projects has generally been to fund each project at the 50/50 level, so it is surprising that this practice is used by only 20% of participants. If the aim is to reduce cost, a lower target may be useful, but this may also increase the probability of a cost overrun. Moreover, experience suggests that artificially low targets can de-motivate project teams. On the other hand, funding at a high probability point may not inspire teams to reduce cost and may encourage funds to be spent in non-optimal ways.*

Project sponsors and teams are often biased toward optimistic cost estimates, combined with a tendency towards overconfidence that these targets will be achieved. Experience suggests this is a root cause of many cost overruns. The increasing use of independent reviews is a good sign that the industry is addressing this issue.

COST REDUCTION CHECKLIST #3

- Are we transparent about the probability point of our authorization estimates?
- If we set aggressively low budgets are we specific about these low costs will be achieved?
- If we set high budgets to reduce the need for supplemental funding, are we convinced that cost reduction efforts will not be negated by the temptation to spend what is in the budget?
- Are we making effective use of independent, third party reviews to overcome any bias towards optimism and overconfidence?
- Does our culture reward open discussion of cost risks and uncertainties?

Strategy #4: Employ cost-reducing technical innovations

SURVEY RESULTS: 70% of participants make moderate to extensive use of technical innovations to reduce cost; they find it effective and expect future cost reductions to be moderate to significant. The greatest benefit is expected to be from “transforming the way we design and execute projects.” This response scored considerably higher than “digital technology advancement” and “internally developed new technologies and solutions.”

OBSERVATIONS: *To understand why there is an air of caution about technical innovation, it is interesting to view this response in the context of the survey questions on Technical & Definition Risk. 80% rated this risk moderate to significant, due to “many costly design changes during execution;” they focused mitigation on “using existing technology” and “simplifying designs.”*

COST REDUCTION CHECKLIST #4

- Are we sufficiently focused on innovative ways to improve the way we design and execute?
- Are we overlooking cost reducing opportunities from digitization and other new technologies?
- Do we have a strategy for identifying and mitigating the cost-risks of new technologies?

Strategy #5: Increase the use of standardization

SURVEY RESULTS: 80% of participants make moderate to extensive use of standardization to reduce the cost of engineering custom solutions for each project, utilize “off-the-shelf” components and systems, simplify specifications and design requirements, and gain learning curve efficiencies through repetition. They consider standardization to be effective and expect future cost reductions to be moderate to significant. The greatest opportunities are in “using industry standards in place of costlier owner-specific standards”, and using a “design one, build many” strategy.

OBSERVATIONS: *It is interesting that, even though it is often credited with driving down costs, only 25% of participants reported “extensive use and aggressively seeking cost reductions through standardization.” And only 25% claimed it was “very effective.” The reason appears to be that standardization is a lot more difficult than it appears. An example is the challenge of cultural acceptance. Many owners have been committed to the idea that the value of their assets is enhanced by their differentiated engineering. To accept an industry standard, or a contractor’s pre-defined solution is, in effect, to admit that this strategy is no longer valid.*

COST REDUCTION CHECKLIST #5

- Are we engaging contractors early enough to incorporate their design ideas?
- Where are we willing to accept industry standards?
- Are we fully assessing how the use of industry standards and specs may impact operating & maintenance costs?
- Do we have the discipline to reject changes to a standardized design during execution?

Strategy #6: Mitigate the performance risk of owner and contractor teams

SURVEY RESULTS: 75% of participants consider performance risks to have a moderate to significant impact. Costs can increase due to ineffective leadership, poor planning and decision-making, and ineffective cost control. 50% consider the loss of experience due to retirements and downsizing to be a major problem, and more than half have concerns about the consolidation among engineering contractors and suppliers. More than half of the contractors report having “downsized and reorganized to be leaner and more efficient.”

OBSERVATIONS: *While the cost savings from merging, downsizing or reorganizing are easy to assess, project cost can increase if the project is understaffed or lacks essential competencies. With 65% of owners reporting that they rely on contractors for engineering, it is easy to understand why “track record of successful projects” and “engineering capability” are their top two criteria for selection. At the same time, all participants ranked “increasing the skills of their project managers and teams” as one of the top 3 areas for contractors to improve. The bottom line is that successful cost reduction will require skilled teams and effective leadership, which will a challenge for both owners and contractors to provide.*

COST REDUCTION CHECKLIST #6

- Do we have the competencies needed in the home office for front-end and execution?
- Are we staffing our project teams with the needed skills and headcount to drive cost reductions and prevent overruns?
- Do we do sufficient due diligence on contractors/subcontractors to ensure they can perform?
- Do we have a strategy to ensure less-experienced people have the skills they need to lead complex projects?

Summary

Three forces are driving up project costs: improving market conditions for contractors and suppliers, increasing environmental regulations and associated permitting delays, and increasing project complexity. It is against these largely uncontrollable forces that the imperative to reduce costs and improve predictability must succeed.

The oil & gas industry worldwide has achieved notable successes using the cost reduction strategies discussed here. The question is: will these be enough to overcome the inherent trends that drive costs up? The survey results provide an answer: we are doing a lot but could be doing a lot more. The six cost reduction strategies clearly work, and, with greater effort, they clearly can be more effective.

Cost reductions only happen when owners, contractors and suppliers work together. In addition to our survey-based research, PennWell and Westney are launching a new online collaboration hub for the global oil & gas project community to share ideas and information, form special interest groups, and keep abreast of the latest trends and lessons learned. As a survey participant you will soon receive an invitation to participate.

We'd love to have your feedback!

Click here to email the authors with your feedback. Thanks again for supporting our research into project cost reductions.

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