



Planning for Project Success

Lack of Proper Planning

Project Failure in the Oil and Gas Industry Due To Lack of Proper Planning

Many projects in the oil and gas industry have failed to deliver on one or more of the three pillars that define project success or failure: Cost, Schedule, and Quality. Only when these three “pillars” are met can a project be judged a success.

We have written other papers regarding project management tools that can enhance the likelihood of [project success](#).

This paper focuses on three projects in which we were called in for Triage but that could have benefited from an earlier application of proven project management tools. In each case below, creation of a Project Execution and Controls Plan (PECP) *before* the project and adherence to it *during* execution could have reduced or eliminated the risk the factors that gave rise to project failure.

Tender Barge Modifications

A recent project involved modifications to a tender barge. The owner had recently purchased the barge, and it required modifications and upgrades for several reasons, including:

- The operating location moved from West Africa to Southeast Asia, with the attendant change in local regulations.

- The operator of the field required a number of repairs, modifications, and recertification to its in-house standards.
- The barge was due for its five-year Special Periodic Survey.

The project failed on both the cost and schedule pillars of project success. Work packs increased from the initial 90 that were planned to 230; duration increased from 60 days planned to 180 days actual; and costs increased from S\$5 million to S\$22 million. A number of factors contributed to this failure, including:

1. Inadequate initial and subsequent surveys in identifying necessary work on the tender barge.
2. Inadequate planning, which led to substantial scope creep and cost increases.
3. Failure to follow a coherent procurement strategy.
4. Ineffective organisational structure for project execution, which allowed different stakeholders to attempt to control rather than support project execution. The resulting confusion led to uncontrolled growth in work scope and a substantial increase in the project duration.



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5. Inadequate testing and commissioning plan, as well as failure to allocate sufficient resources to the closeout phase, leading to an extended closeout period.

Each of these are discussed in greater depth below.

Although the sale contract obligated the former owner to carry out the initial planning for the project, it naturally had limited incentives for successful project execution. In addition, the former owner's internal planning teams were already overstretched on other projects. Consequently, the former owner assigned to planning a team of technicians that was too small and composed of individuals with limited planning and execution experience.

Compounding the problem, the pre-planning surveys were largely conducted by the former owner's personnel and the quality of these surveys was poor. The former owner allowed only 4 days for surveys which, together with the absence of an electrical superintendent, contributed to the poor quality of the survey. Additional surveys carried out later by the project team were also not as thorough as necessary.

Moreover, the former owner did not follow a coherent procurement strategy. Although quotes had been solicited during the planning phase, there was little or no confirmation or

follow-through on ordering items with long lead times. The majority of orders were placed 2 months before commencement of project execution, even though the lead time for some items exceeded 6 months.

The ineffectiveness of the structure of the project management organisation also contributed to project failure. For example, the operator initiated work on the project without consultation or approval of the new owner. In one instance, a 5-ton pad eye cost nearly S\$10,000 after it was repeatedly welded and removed. The barge crew also constantly interfered in directing certain aspects of project execution rather than supporting the execution team.

Another source of project failure concerned additional work that was added after execution began. During planning, the previous owner had budgeted S\$5 million for the entire project. One month into the project the new owner added S\$2 million in work to the original scope. This addition effectively made prior planning redundant as an adequate mechanism to deal with change orders had not been defined with the shipyard.

Finally, the testing and commissioning phase increased from a planned 2 weeks to an actual 6 to 8 weeks and continued even after the rig arrived on location for work. This was due primarily to poor planning for commis-



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sioning and inadequate staffing after the execution phase.

Accommodations Barge Modifications

Another recent project involved modifications to an accommodations barge. The operator required the accommodations to be Norwegian compliant, including single-person cabins.

This project was failing on the cost and schedule pillars for several reasons, including, among others, an unrealistic timescale allocated to the project, poorly defined scope of work and requirements leading to increased costs, substantial scope creep, and an inadequate change control system. The circumstances for these were the following:

- Inadequate planning. The owner did not take the time to develop a PECP, which meant that the parameters to ensure success (strategy, objective, comprehensive Scope of Work, Risk Analysis, etc) were not documented.
- Lack of experience. The owner lacked personnel with experience in planning and executing projects of this type.
- No clear documentation of organisational structure for the project. The lack of a PECP led the operations team to seek a

dominating involvement in the project, instead of a role to support the project team.

- Late involvement of the main engineering design company. Because the main design company was not involved until late in the planning phase, the scope of work was not adequately defined, which in turn meant that the estimated duration of the execution phase and the projected cost would not be accurate.
- Inadequate surveys. The surveys carried out on the accommodations barge before planning were inaccurate. To underscore this point, surveys were still being carried out 2 weeks before the vessel was due in dry dock to determine the scope of work. Also worthy of note is the fact that the generator engines had exceeded their design lifetime and had to be replaced; a major item not included in the original work scope!
- The resources allocated to the project were inadequate, considering the amount of planning and monitoring that was necessary. This was evidenced by the fact that personnel and resumes were still being sourced well into the project.



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Offshore Drilling Vessel

Another recent project involved a fabrication and integration of topsides onto a semisubmersible drilling rig, which was failing on the cost pillar.

When initially planned, the contract price for the entire scope of work on that phase was estimated to be £23 million and the entire duration to be 2 years. The pricing for the initial work scope was based on actual cost of labour and materials for work within the initial scope, plus a lump sum for overhead and profit elements. The projected costs of the project, however, were growing without corresponding increases in scope. The owner sought a review of the project to determine its options.

Initially, the owner had contracted directly with a main builder that subcontracted much of the actual construction. During the execution phase, the owner novated the contract with the main builder, which allowed the owner to directly contract with the main sub-contractor that was responsible for the bulk of the fabrication work.

However, the owner decided to terminate the contract and move the work elsewhere. This decision resulted in a dispute over the final amount to be paid to the main subcontractor, which included claims for lost profit, opportunity loss, and damage to reputation amounting to over £22 million.

Our investigation revealed that these problems arose because of a faulty contracting strategy by the owner and the main builder, which led in turn to a contract with the main subcontractor that was poorly constructed from the owner's viewpoint to minimising costs and schedule delays.

In addition, the main builder had not properly engaged in cost control and failed to provide sufficient monitoring of the progress (% complete):

- Monthly payments to the main subcontractor payment sums were based on forecasts of progress toward completion of the initial scope of work for the following month. By the time the owner terminated the main subcontract, the main subcontractor had billed the owner on the basis of completion at over 66%, although our survey of the work determined that the actual percentage completion was 39%. This difference alone meant that the Owner had been overbilled for the lump sums on the order of £800,000.
- The contract called for other payments based on overhead elements and "recoverable" costs for certain items. Distinguishing between recoverable cost and overhead was difficult, however, because the contract specified rates for recoverable costs that included overhead elements. The labour



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rates charged for initial scope work, moreover, were nearly identical to the labour rates set out in the contract for change orders, which specifically included overhead and profit. These elements led to unnecessary costs for the owner.

- In addition, the difference in pricing for initial scope of work and change order work gave an incentive to the main subcontractor to classify work as change order instead of initial scope. Nevertheless, the main subcontractor did not appear to have abused its position on the project in question, even though distinguishing between initial scope work and change order work on several aspects of the project was difficult.

All in all, the poor contracting strategy led to severely high unnecessary cost increases for the owner. These in turn prompted the cancellation of the contract and moving project execution to a different location. These circumstances show that the owner had not given a lot of thought to the

contract strategy, which should have been determined in the planning phase. This, together with severe scope creep and an ambiguous change control system, were the main culprits behind this project failure.

Conclusion

Sufficient technology, technical knowledge, and expertise are undoubtedly available to meet the requirements of most, if not all, capital investment projects in the oil and gas industry. Nonetheless, the industry is inundated with projects that are considered failures on cost or schedule parameters, which is a direct consequence of the failure to use project management tools.

Creation of and adherence to a PECP could have prevented issues costing tens of millions to the owners of the projects discussed above. As an independent company, Èpeus can offer effective assistance in this area and help projects succeed on cost, scheduling, and quality parameters.

Visit our [website](#) for more information about Èpeus and how we can help you achieve project success.