



An 8over8 White Paper

Managing Change in the World of Major Capital Projects

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Investing for the Future with Major Capital Projects

Major capital projects are the lifeblood of the oil and gas industry, and their end-products are a significant source of revenue for the project stakeholders (private, public and governmental parties) who share the burden of cost and risk associated with these projects. With so many interests riding on the success of a major capital project, it is no surprise that every project management and execution team is under intense pressure from stakeholders and investors to deliver on budget and on time.

Given the many years experience of National Oil Companies (NOCs) and International Oil Companies (IOCs) of investing heavily in the delivery of such major capital projects, it comes as a surprise to many outside the energy sector that the average cost overrun on major capital projects between 2005 and 2009 was 15%, and that nearly 40% of mega projects (>\$1bn) exceed budget and cycle time by 10%.

While such overruns can be quantified, and greatly minimized using a variety of best practice processes and early warning systems, the con-

sequential effects of these overruns can be felt by the party managing the project long after the project is complete and the asset goes into operation.

The Changing Landscape of Major Capital Projects

Major capital projects are more complicated than ever before, on a number of levels - they are larger in scale, require extensive financing, work to compressed project timelines, are technically more challenging, involve more stakeholders and are often managed by a collection of teams based in different locations. In addition, the geopolitical climate has changed: there is an increased regulatory burden in terms of local/social content and environmental responsibilities, and some US IOCs are reporting that influence of US foreign policy has to be classed as a potential risk for some of their major capital projects.

In this changing landscape the super majors are more proactive than ever in protecting their capital investment in order to gain maximum return on investment and secure a competitive advantage that largely hinges on the success, and output, of those capital projects. Their publicly-announced strategies for 2009-2011 are very specific about focusing on major

projects, and the need to address cost overruns.

Some Common Causes of Overruns

Cost and schedule overruns can be attributed to a variety of causes; not all are within the control of the project stakeholders, for example an unstable geopolitical situation or natural disasters. However, overruns that result from the following list are very much risks that can be identified, managed and mitigated by project stakeholders: incomplete design, a poorly defined or inappropriate contracting strategy, and inadequate contract execution.

An example of inappropriate contracting strategy includes selecting an EPC contract as a vehicle to transfer risk from project stakeholders to the EPC contractor without due consideration of the risks that this contracting strategy, in itself, poses. If an EPC contractor has won the contract on the basis that completion risk would be addressed by binding the contractor to a schedule to completion (secured by liquidated damages for delay), and cost secured by receiving a fixed lump sum price, then it comes as no surprise that the EPC contractor, who may have bid low to get the work but knows that they are more likely to overrun a lump sum bid than under-run, has more

to gain than lose by submitting as many claims and variation requests as possible.

Other factors contributing to schedule delay and cost overrun relate to materials and equipment, lack of EPC contractor's experience, late approvals due to poor coordination and communication between project stakeholders, poor communications between project management team, contractor and suppliers, and unrealistic project scheduling.

Another prime example of poor contract execution is not having appropriate, joined-up tools and mechanisms to provide continual oversight and governance of risks that may negatively impact

completing the project to schedule and on budget. Early warning, and continual monitoring, of risks is critical to project success. The days of managing and monitoring risk with a collection of disparate spreadsheets stored over multiple laptops and shared storage drives are long gone; they are simply not fit for purpose in this era of the complex megaprojects.

This is not a reflection of the quality of the contract management team, it is simply a realization across the industry that tracking vast quantities of data, contractual communications, contractual obligations, and potential financial commitment vs. budget vs.

actual commitment vs. expenditure is something that requires a comprehensive contract management system, not a spreadsheet.

Getting the Rubber on the Road

Resistance to adopting a contract management system is often significant from site-based project personnel. The most commonly cited reason is that a contract management system will slow down decision-making on fast moving projects, and also inflict unnecessary bureaucracy on project staff who continue to invest in the paradigm that says "managing capital projects is more art than science."

Good procedures and flexible systems can accommodate unplanned and urgent work on site

Responsible	Workflow	Action	Endorses or Informed inside Project	Potential Risks Captured in Contract Risk Register
Company Site Representative		Company Site Representative (CSR) selects the type of communication they wish to send to Contractor, i.e. Site Instruction. Approximate cost and schedule impact details appear in contract risk register.	Contract Holder, Technical Authority, Engineering Manager, Cost Engineer, Planning & Scheduling	Estimated cost/schedule impact
Contractor		Contractor receives and agrees Site Instruction. Work commences.		
Contractor		Contractor raises Change Order Request (COR) stating scope, cost and schedule impact of Site Instruction		Estimated cost/schedule impact
Company Site Representative		CSR evaluates and negotiates/agrees COR. Contract risk register automatically updated.	Contract Holder, Technical Authority, Cost Engineer, Planning & Scheduling	Estimated cost/schedule impact. If revised COR is rejected by Contractor there may be a future claim
Company Contract Administrator		Contract Administrator issues Change Order to Contractor confirming scope and negotiated cost and schedule impact.	Contract Holder, Technical Authority, Engineering Manager, Cost Engineer, Planning & Scheduling, Company Site Representative	Actual cost/schedule impact
Contractor		Contractor completes work.		
Contractor		Contractor submits AFP (Application For Payment) – pro forma invoice and supporting documentation.		
Company Contract Administrator		Contract Administrator coordinates review of AFP. If approved, Contractor is authorized to submit invoice to Finance.	Contract Holder, Technical Authority, Engineering Manager, Cost Engineer, Planning & Scheduling, Company Site Representative	Ensures all contractual obligations have been fulfilled

However, one does not have to ask too many Contract Engineers to hear numerous stories of sleepless nights over how to reimburse a contractor for work performed after a rushed hand-written site instruction was issued by a field engineer without any follow up notification to the contract management team; the first they heard about it was when the invoice was received!

The truth of the matter is that to successfully manage modern, complex projects with compressed schedules in a changing geopolitical climate, and with the lean management teams commonly used these days, the project and associated risks must be managed by exception. IOCs are increasingly realizing that using a contract management system designed for major capital projects, integrated with their ERP system, dramatically reduces the effort required to fully manage and monitor everyday communications, activities, contractual obligations and contract spend, and does so in a transparent, repeatable manner. This frees up valuable expertise to deal with the unexpected, i.e. the exceptions.

To illustrate this, let's take a look at how a contract management system for capital contracts provides complete transparency and advance notice of site instructions to all that require visibility, while providing the flexibility and speed required by field engineers to deal with minor, unplanned changes to work that pop up on site -

(see diagram on opposite page)

The Consequential Effects of Overruns on Corporate Strategy and Opportunities

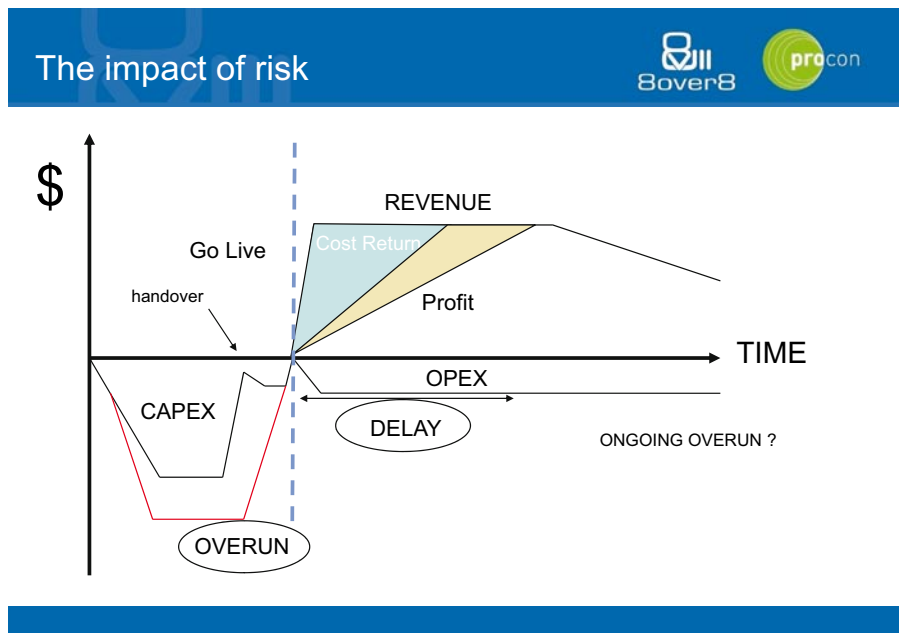
It is worth taking a moment to reflect on other effects of overruns, apart from the obvious metrics of spending more than was budgeted for an asset that was delivered later than planned:

- Affects standing with lenders and access to future capital: this results from delayed income from Production Sharing Agreements, and also from cost recovery issues with host governments
- Reputation as being a project partner that does not deliver or monitor its commitments; this affects access to new opportunities and gives advantage to competitors
- Harder to recruit the quality project and contract professionals required to replace the aging population of capital project experts and practitioners.

These issues are of vital importance to the future of IOCs in a

global, commercial environment where only 7% of the world's reserves are now fully accessible by IOCs and there is a notable increase in worldwide competition from NOCs expanding outside their host countries. In addition, the price environment for oil and gas is uncertain with refining margins also being squeezed.

Adopting a contract management system that provides complete visibility into potential and actual risks, as well as a set of standardized processes and templates that ease contract management tasks in a cohesive, repeatable manner has proven to be a winning formula around the world. 8over8's contract lifecycle solution ProCon is a formidable defense system which puts owners in control of the shared communication channel, thus mitigating the risk of contract overruns and poor cost recovery. Forward-thinking IOCs who have implemented such a system have successfully delivered major capital projects on budget and on time, and enhanced their reputation as world class project partners.



8over8 Company Background

Ritchie Anderson joined 8over8 as Product Manager with 20 years experience in the International Energy, Supply Chain and IT industries. His career began with Mobil North Sea Limited (MNSL) in Aberdeen, UK where he worked in the Facilities Department for offshore projects in the UKCS. From there he progressed to fulfilling a number of head office and site-based commercial roles on the CAPEX phases of major capital projects, most notably the SAGE Gas Plant (Phases A & B) in London, Belgium and St. Fergus, Scotland, and the Qatargas 1 project at Ras Laffan, Qatar.

After seven years at Mobil Oil he took the role of Senior Data and Knowledge Management Consultant at the Grant Sinclair Group. Using hands-on experience of strategic supply chain management techniques in diverse and remote locations Anderson applied this knowledge to the development and application of practical IT solutions for the benefit of Grant Sinclair clients.

This position led Anderson to found his own consulting firm, Energo Ltd., whose core expertise was implementing strategic ICT business solutions that made its customers more competitive within their chosen marketplace, primarily the international energy sector.

As Product Manager with 8over8 Anderson is responsible for defining the strategic roadmap of ProCon to ensure that the market in general, and clients in particular, are provided with the state-of-the-art functionality required to manage complex contracts on contemporary oil and gas major capital projects.

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Our mission: *to help Contract Stakeholders make informed decisions and execute their contracts in the most efficient manner possible in order to protect the stakeholder investment. Our motto is “We leave no stone unturned.” Our determination to find solutions to our customer challenges is relentless.*

We work with our clients to protect their investment in capital projects, delivering collaborative contract lifecycle management solutions that help oil & gas companies bring together people, processes and content. Our cost-effective web based solutions enable customers to maximize the contractual relationships with their business partners resulting in increased contract standardization, enhanced contract controls, greater transparency and shortened contract negotiation cycles. Our scalable technology gives customers improved visibility and the opportunity to embed best practice in all contracts while managing risk and maintaining economic value, helping them navigate in an increasingly complex and challenging capital project landscape.



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