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Optimal Project Outcomes Flow from Contractor Coordination

By creating an integrated business process for project insight and changes, owners/operators keep contractors in synch.

Asset improvement projects in the oil and gas industry are rarely if ever easy, starting with sheer physical challenges such as getting materials to remote geographies or offshore rigs. Add in the number and variety of contractors involved in a project and the challenges multiply.

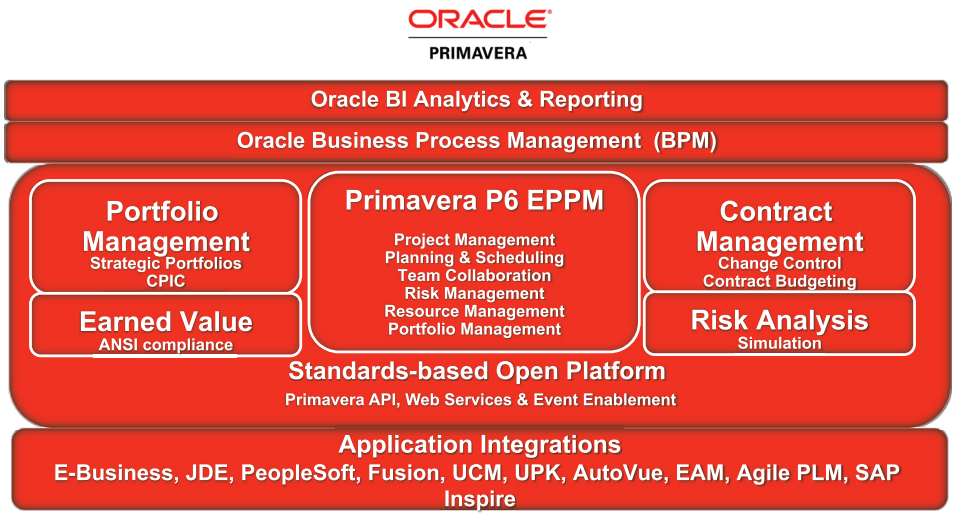
Just think of the different players involved, and their varying roles.

First, there is the owner/operator organization that will be using the improvements, and any maintenance contractors who are part of normal operations. The owner organization likely has contracted with an engineering, procurement, and construction (EPC) firm to design and install the assets that are at the crux of the project. In addition, project leaders must collaborate with electrical firms, welders, process control consultants, construction equipment operators, and logistics firms.

It is this coordination challenge – just as much as the scale or scope of the work itself – that leads to complexity in oil and gas industry capital improvement projects.

An additional element of complexity, at least in North America, is that projects are often about incremental improvements. Major new refineries typically aren't being built, but companies are looking to squeeze more productivity from existing facilities, perhaps by adding new vessels or processing units. In most cases, the existing assets must stay running.

"The projects today are often about debottlenecking," observed Geoff Roberts, Oracle's industry manager for the oil and gas sector. "By adding some new equipment or technology, a site can often improve the process or capacity for the major assets that they already have."



A broad and deep software suite for project management spans applications for portfolio management, project scheduling and management, and contract management, as well as foundational elements for integration and content management.

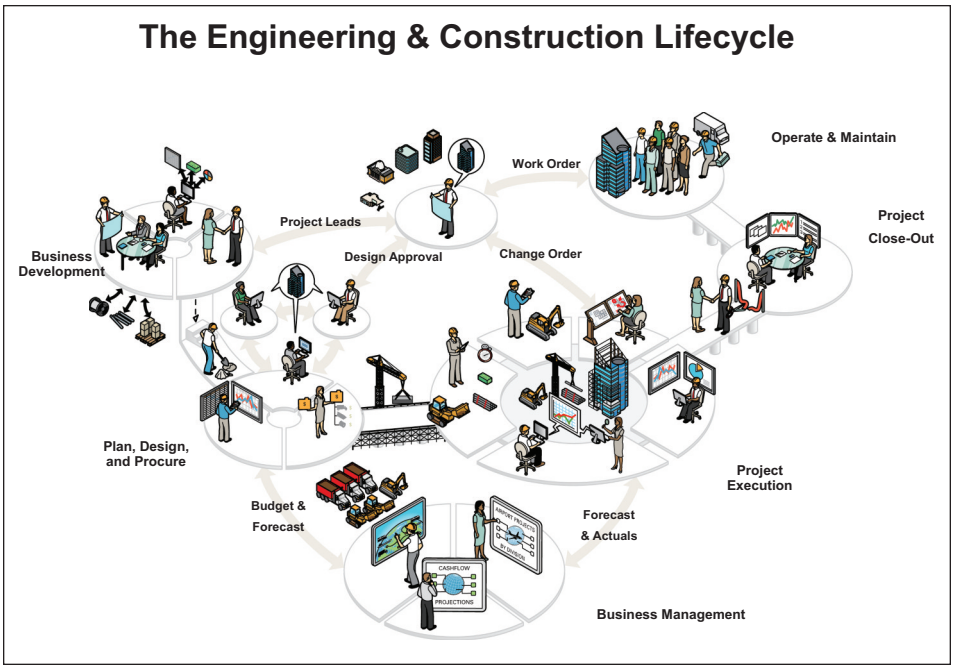
Risks at stake

When project leaders don't have an automated means of keeping contractors in synch, unexpected costs and delays can result. And as projects unfold and changes become necessary, the potential for problems multiplies without coordination.

Take something as seemingly straight forward as an additional crane needed for a project. Perhaps a vessel arrived on site earlier than expected, and to install it, a crane must be brought on site as well. But if that change isn't coordinated with the different teams on site, a negative "ripple effect" may ensue, said Russ Novak, director of consulting with ARC Advisory Group, a Dedham, Mass.-cased analyst firm, as well as a former manager in the energy industry.

For example, said Novak, if the accelerated arrival of a crane isn't coordinated with the manager in charge of the yard, then to make way for the crane, materials might have to be moved, possibly disrupting work in an adjacent work area.

"You need to guard against those ripple effects by tracking every change in the



Successful project outcomes rely on the effective interplay of many partners when it comes to steps like design approvals or changes within project execution.



Collaborative contract management improves tactical execution, but business requirements and overall goals are set much earlier in the lifecycle.

project in relation to the entire project management structure so you can determine exactly what else might be affected," said Novak.

When change management is handled poorly, costs may spiral, and contractors who don't get paid for additional work or are otherwise left unsatisfied might take legal action. Litigation risk from contract-related matters exists in every industry, but appears to be an elevated risk within the oil and gas industry.

According to the 2011 Fulbright Litigation Trends Survey, a cross-industry, annual study of litigation trends commissioned by the international law firm of Fulbright & Jaworski, 60% of energy industry respondents named "contracts" at the leading type of litigation matter, outpacing environmental and personal injury litigation. By contrast, across all industries in the eighth annual study, just 48% of respondents named contracts at the most frequent litigation matter.

Toward a foundation

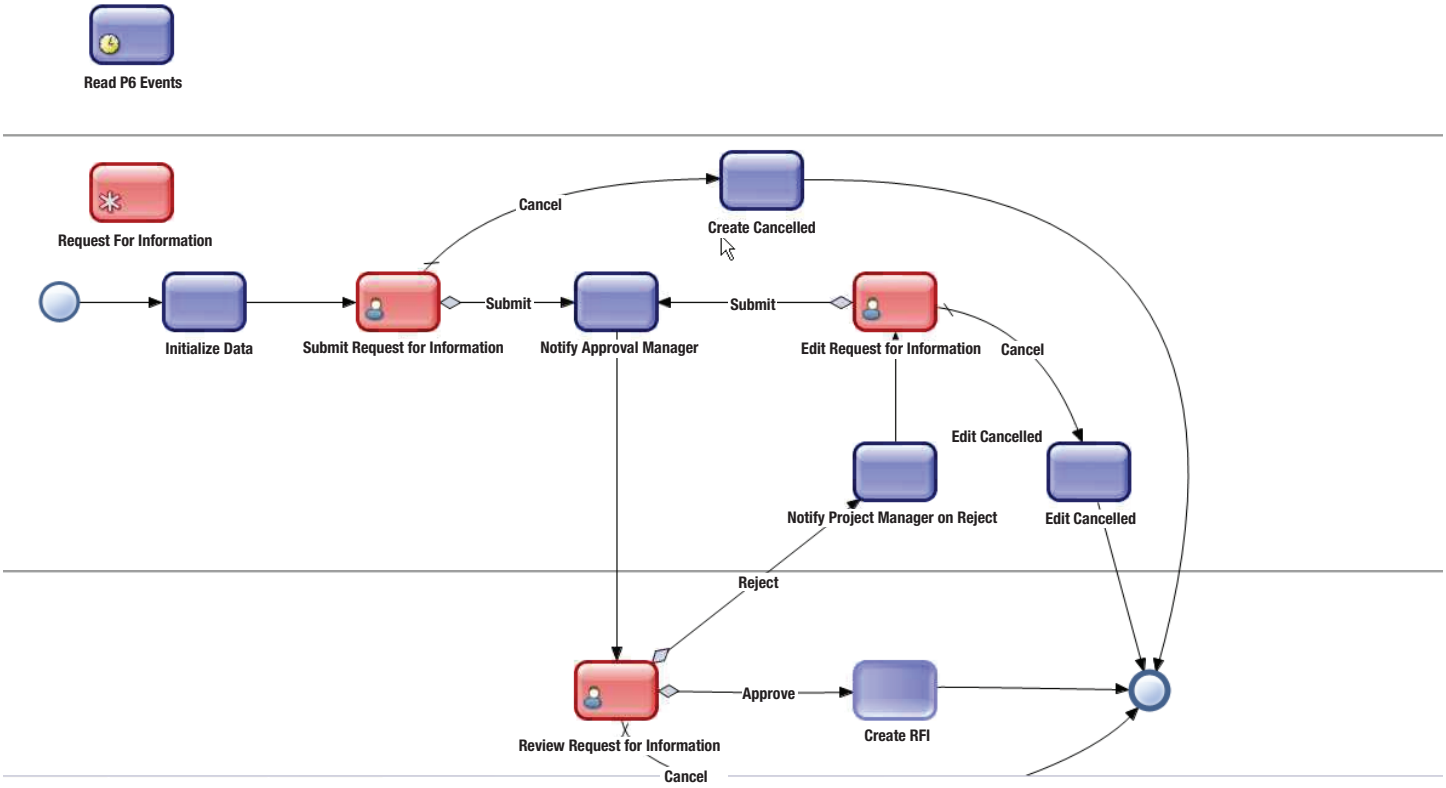
Well-coordinated contractor relationships tend to diminish litigation risks, but of more tactical importance, they keep projects on track. To coordinate projects, most companies use some form of project management software, but it might lack advanced functions such as role-based key performance indicators, or workflow-enabled applications aimed squarely at contract management.

Many companies have automated part of the challenge involved in project management, but still have information silos. For instance, change requests to a project might be facilitated through a custom-built web portal, but the data related to an approved change might have to be manually re-entered into the project schedule or rekeyed into an enterprise resource planning (ERP) system to kick off any needed transactional processes.

There may also be information technology gaps between the engineering systems used by EPC firms, the project management systems used by owners/operators, or between both these systems and operational maintenance systems, said ARC's Novak. An EPC firm may have a customized engineering and data management system that is highly functional for internal purposes, but not easily integrated with the systems used by owners/operators, noted Novak.

Only in more recent years have systems that feature workflow and portal-based business intelligence begun to break down gaps between information silos and get the right mix of decision-makers involved in project workflows.

Oracle Primavera's project management solution can serve as a foundation for managing project schedules and resources, while the Oracle Primavera Contract Management Business Intelligence Edition excels at coordinating contractor activities and project changes, as well as facilitating requests for information. When used as an integrated set of applications, users can see detailed sched-



User-configurable workflows with a contract management solution allow project teams to collaborate and share documents to facilitate common tasks like requests for information.

ule information from the contract management solution and go into the schedule analysis to conduct "what-if" analyses.

"We are talking about a complex ecosystem of partners working a project that typically involves changes," said Roberts, "so you need everyone within that ecosystem to be able to ask questions through a request for information mechanism, while the project owner needs a way to take all those requests for information and potential changes into consideration."

Contract Management has workflow and document management capability so that appropriate reviews and supporting documents can be handled by decision-makers. When requests for information identify the need for a change, workflow helps execute the change request and any associated bid processes. And via integration with ERP systems, the cost and schedule ramifications of field-level changes flow through to ERP.

"It's very much an integrated business process that can start with bids or other activity in Contract Management," said Roberts. "That way, everyone is working off the same numbers, the same documents, and the same level of information. You are able to arrive at a single version of the truth."

A collaborative system for contract management can be kept consistent with an enterprise's main systems of record, such as an ERP system. For example, field-level changes and associated work orders executed within contract management can link to procurement and financial processes in ERP.

Various oil and gas companies use Primavera's solutions, spanning applications for Project Management; Enterprise Project Portfolio Management, which manages resources and analyzes multiple projects; and Contract Management. The benefits of using these applications have led to client successes in the oil and gas sector, including:

- The use of an integrated system for project management at a global energy company is credited with helping accelerate delivery of "first oil" on a project. The system also includes a web-based collaborative platform for owners and contractors. The integrated system helped save more than a million dollars in labor, and increased craft productivity.
- A large oil and gas E&P company uses Oracle's Primavera P6 Enterprise Project Portfolio Management to integrate its rig schedules with development schedules. The system is used to prioritize drilling activities on multiple rigs and perform "what-if" analyses to prepare for unforeseen changes in rig availability. The system allows for sharing and leveling resources across multiple projects.

Insight and control

Project participants also need simplicity in understanding project progress and responsibilities. That's where business intelligence comes in, especially in the form of role-based dashboards.

For example, an executive with the owner/operator is able to obtain a quick, high-level grasp of overall project progress, changes, costs, and estimated final costs, or, the projected "out turn" for the project.

In the oil and gas industry, an aging workforce makes it important to structure review processes so that the proper experts weigh in on decisions.

Similarly, an administrator with a contractor primarily will be interested in seeing the status of any bids, requests for information, or change requests the contractor is involved with.

The web user interface acts as a role-based control center. From a technical perspective, the user interface uses "portlets" configurable to various roles within and outside of the organization.

Another foundational element in keeping contractors and project leaders in synch is the concept of business process management, which is enabled by software features such as user-configurable workflows and document control. Some workflows would be common to any project, such as a "request for information" workflow or a "bid request" workflow.

Workflow routings can be configured so that the appropriate experts or team leaders can answer questions or consider approvals. All the appropriate documents can be attached to the workflow so that decision-makers have the necessary information in front of them. The combination of workflow and document management also enables audit trailing, which is seen as a useful feature for change management.

"Change management has always been a big issue in managing projects," Novak said. "Some of the companies involved with project management software really emphasize having provenance over change – when a change was made, who made it, what supporting documents were involved, and who approved it. That type of function makes it easy to see how you got to a certain point because all you have to do is look at the record."

The human element

Of course, the success of any collaborative foundation depends on the skills of a multi-disciplinary team who have mastered project management techniques such as stage-gate decision-making. In Novak's view, one of the best practices to ensure good project outcomes is to provide the project team with at least one senior leader who can monitor the business and market conditions relevant to the project.

"To judge whether a project has been a success, you don't just look at the technical side of the project – [if] it met the schedule, or even the cost projection," said Novak. "You also have to look at the project from a business perspective, such as whether the new assets are meeting expected capacity or quality goals. It's important to manage both aspects."

In the oil and gas industry, an aging workforce makes it important to structure review processes so that the proper experts weigh in on decisions. On sites such as offshore rigs where equipment might have been field modified, a project may beg for reviewers who know the modifications commonly made to assets, and can adjust installation or procurement accordingly.

Robin Short, senior vice president of internal operations with the Houston chapter of the Project Management Institute, as well as a project manager with Transocean, the offshore drilling contractor, believes it is crucial that any software systems used to assist in project management be able to accommodate review steps by experienced engineers and project managers who know first hand the conditions found on rigs in procurement of parts, logistics challenges for getting materials to remote places, or other real world constraints that must be weighed to keep projects feasible. "The software is only going to be as good as the data fed into it," said Short. "Whatever you put into your systems should be reviewed by an experienced human being."

Oracle's Roberts believes a collaborative contract management foundation can accommodate this expert element. The foundation supports stage-gate decision making and review processes, thus harnessing veteran expertise.

By getting all the players on a common system for contract management, change requests, requests for information, and role-based business intelligence, the coordination challenge can be met, which sets the table for better project outcomes. As Roberts concluded, "Achieving better project outcomes in this industry is about everyone in the extended team knowing the state of progress on changes and requests, and seeing if there are any road blocks that could harm progress." ■

About Oracle

With Oracle's Primavera Enterprise Project Portfolio Management solutions, oil and gas companies can successfully select, plan, and execute projects across the enterprise, while answering critical project-related questions.

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