

Deloitte.

Deloitte Oil & Gas
Elevating the success of
oil and gas capital projects



Deloitte Center
for Energy Solutions

As capital projects become more complex, certain traditional planning and execution methods are often ineffective; therefore, intervention is required.

Our offering

Deloitte has a distinct perspective having advised the world's leading oil and gas companies on many challenging projects around the world.

As oil and gas capital projects become increasingly complex and unpredictable, the tools and procedures used to plan and execute them should evolve.

The evolving nature of capital projects is driving the need for change in the oil and gas industry:

- 65% of [capital] projects around the world fail. Indications of project failure include cost overruns exceeding 25% and execution time extending 50% or more beyond scheduled durations.¹
- Only 54% of projects are completed on time.²
- Only 54% of projects are completed on budget.³
- 69% of executives are not confident that their organization is optimizing return on invested capital for large industrial projects.⁴

There is room for improvement.

Deloitte has developed and implemented interventions on many of the world's largest and most challenging projects to improve project outcomes and reduce project costs. Our targeted interventions focus on enhancing collaboration between owners and contractors, including identifying and implementing improvements to engineering, procurement, fabrication, construction, project controls, reporting, and discipline interfaces.



Deloitte can help significantly reduce capital project costs.

¹ Ali Klaver, "Speed Kills," Project Manager Magazine, December/January 2012, <http://ipaglobal.com/getattachment/News-Room/Announcements/Edward-Merrow-Reveals-Why-Megaprojects-Fail-in-Pr/AIPM-Project-Manager-Magazine-Why-Megaprojects-Fail-Edward-Merrow.pdf.aspx>

² Project Management Institute and The Boston Consulting Group, "Executive Sponsor Engagement," Pulse of the Profession, October 2014, <http://www.pmi.org/~media/PDF/Knowledge%20Center/PMI-Pulse-Executive-Sponsor-Engagement.ashx>

³ Project Management Institute and The Boston Consulting Group, "Executive Sponsor Engagement."

⁴ Deloitte Dbriefs Webcast, "Capital Planning Trends: New Ways Organizations Are Adapting to Uncertain Times," July 12, 2010.

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Complicated vs. complex

Some projects are complicated; some are complex.⁵
What's the difference?

Complicated projects are highly technical, such as duplicating an offshore platform, and are generally suited for a traditional stage gate process. The results are typically predictable and foreseeable, despite the fact there are many interfaces between stakeholder groups.

Complex projects are also highly technical, but they have a high degree of variability, such as first-of-a-kind plant technology or geography. Prescriptive (stage gate) processes are traditionally used to manage these types of projects; however, the unforeseeable nature and interactions of events make the outcomes unpredictable.

Oil and gas capital projects are complex with unpredictable challenges, and project complexity profiles can change throughout the project lifecycle.

Many owners and contractors have adopted a stage gate process to manage and control large capital projects. Typically, they hypothesize that projects can achieve the desired objectives using a stage gate process. However, many of the traditional processes used to manage projects are often unable to identify, mitigate, or uncover the unforeseen factors

that increase project risks and cause projects to underperform, get sidetracked, or go over budget.

Both complicated and complex projects require more advanced project management capabilities in order to better forecast outcomes. Also, at some point during the lifecycle, either the degree of complication or the complexity of a project often requires intervention from outside the project team to improve results.

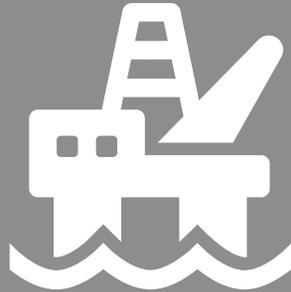
Project profile	Measure of complexity	Types of intervention
Routine	Both low organizational and analytical complexity	Lend themselves to current prescriptive stage gate processes in terms of their degree of complication and complexity. They can be effectively completed using existing stage gate processes.
Highly complicated projects	Low organizational complexity and high analytical complexity	The stage gate processes continue to be followed, but there are focused teams assigned to intervene in certain processes and sub-processes, i.e., vendor data management.
	High organizational complexity and low analytical complexity	The stage gate process is not effective and cannot be followed. Significant intervention is required to alter the stage gate processes, i.e., governmental (national/local) and local content/social issues.
Highly complex projects	Both high organizational and analytical complexity	The probability of achieving desired results is very low. Project alternatives should be reconsidered and the business case should be reevaluated to reduce the degree of complexity and/or implement dynamic system management.

⁵ Dr. Will Allen, Complicated or complex – knowing the difference is important, <http://learningforsustainability.net/sparksforchange/complicated-or-complex-knowing-the-difference-is-important-for-the-management-of-adaptive-systems/#sthash.9IIS4cJN.dpuf>.

Complicated projects

Building a second offshore platform in an area

- High degree of certain outcome
- Similarities between projects
- Require variety of expertise
- Past projects indicative of future
- Reliance on formulae



Complex projects

An upstream and downstream project in a set of new frontiers—environmental, geopolitical, technological

- Uncertain outcome
- Interventions may contribute to outcome
- Individual and unique
- No “cookie-cutter” recipe of success

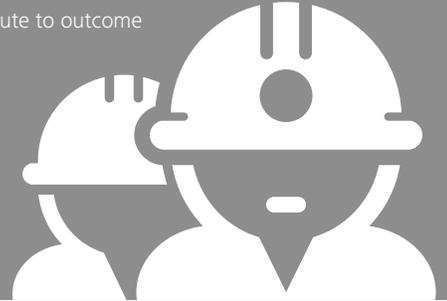
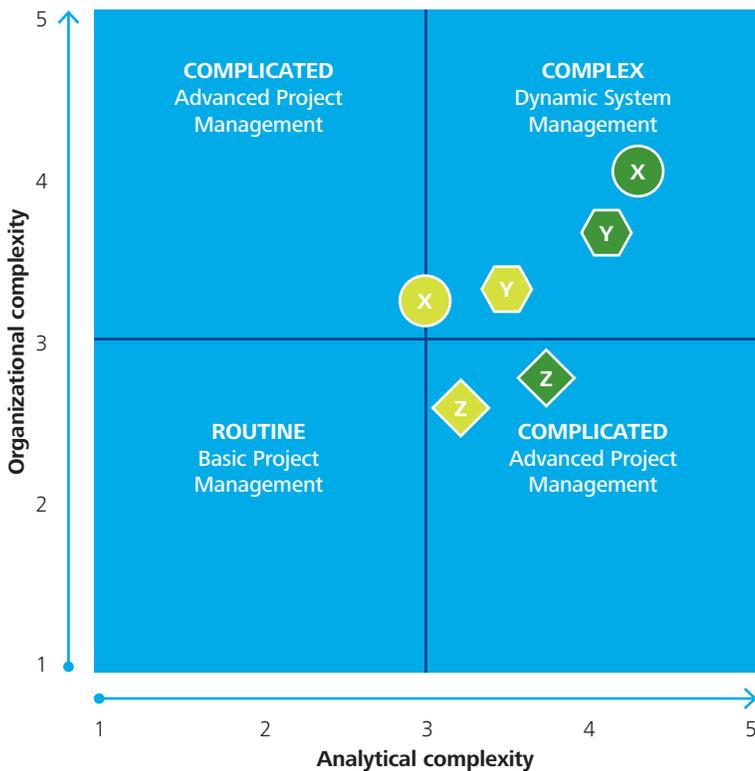


Figure 1: Capital project complexity profiles

A capital project that is initially profiled as complicated may actually turn out to be quite complex when in the execution stage.



■ Perceived profile ■ Actual profile

Project X – Offshore integrated drilling, production, and storage platform

Project Y – Full field LNG development

Project Z – Offshore drilling and floating production storage and offloading

Organizational complexity

- Conflicting parties and range of individual and organizational differences

Analytical complexity

- Array of uncertainties and interrelated major variables
- Known alternatives in the business case
- Frequent decisions on implementation points
- Assumptions that need to be monitored

A project integrator can help you, your people, and your project meet its goals



As a project sponsor, are you comfortable that you have the right people in the right places at the right times doing the right things?

If not, Deloitte can help.

Deloitte's industry leading combination of multi-disciplinary experience means we are distinctly qualified to serve as your project integrator.

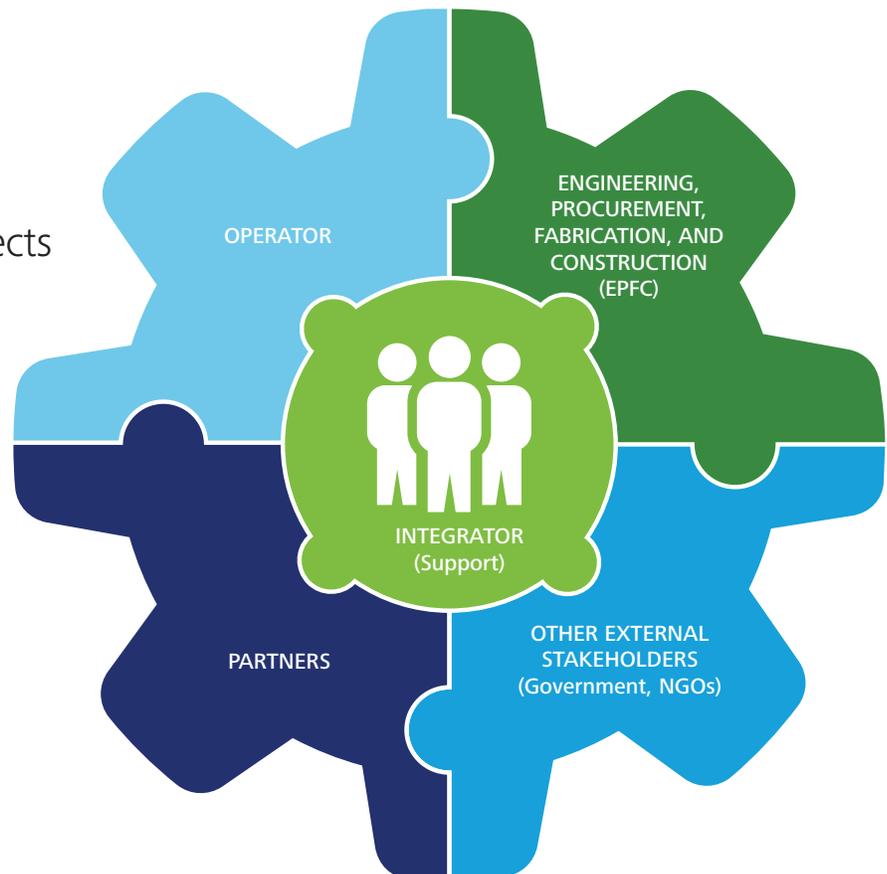
As an integrator, Deloitte's role is to work with you to help identify issues and develop a plan to help you fix what is not working by bringing you unbiased, actionable information—coupled with effective interventions—to help you, your people, and your project meet your goals.

Deloitte can also assist in your efforts to continuously analyze your capital projects complexity profile across the lifecycle, to help reduce costs and improve performance.

Deloitte as your project integrator:

- Trusted advisor
- Real-world experience with many of the biggest and most challenging projects
- Driver and catalyst for improvement

Typical Capital Project



Project interventions

As capital projects become more challenging and unpredictable, many of the traditional planning and execution methods have been demonstrated to be ineffective, resulting in poor project performance.

How Deloitte can help

Some impactful interventions that assist clients with facilitating capital project success include:

Illustrative area of focus	Challenges	Illustrative interventions	Impact of intervention
Capital project controls	Limiting exposure to reputational risk and fines, penalties, and litigation	Enhanced internal project control frameworks enable stronger and more effective results, with reduced cost overruns and schedule delays	<ul style="list-style-type: none"> • Reduced project cost overruns, penalties, and inefficiencies • Lower frequency of “surprises”
Management of modularization	Increasing efficiencies and reducing potential delays; lack of alignment between engineering and fabrication requirements	Facilitate alignment of engineering deliverable schedule with fabrication requirements to enhance fabrication workflow	<ul style="list-style-type: none"> • Reduced schedule risk • Mitigated risk of change orders and/or rework
Project experience shortfall	Inexperience and lack of ability to manage a new way of construction such as unconventional	Implement workforce knowledge training; incorporate industry leading practices	<ul style="list-style-type: none"> • Improved productivity • Reduced costs
Vendor data constraints	Deviation between specs and reality; how is the scope of data collected and shared to stakeholders?	Incorporate efficiencies into a common project bottleneck by proactively working with vendors	<ul style="list-style-type: none"> • Improved engineering efficiency • Reduced schedule delay risk • Limited rework
Supply chain bottlenecks	Managing materials and material sequencing	Analyze supply chain bottlenecks and implement targeted interventions	<ul style="list-style-type: none"> • Reduced schedule delays
Tax efficient supply chain	Utilizing leading legal and tax entity structure	Develop an effective transfer pricing methodology	<ul style="list-style-type: none"> • Cost savings from a tax efficient supply chain
Equipment standardization	Designing to standardized equipment	Facilitate organizational changes to incorporate standardized equipment into design	<ul style="list-style-type: none"> • Improved procurement cycle timing • Reduced project duration
Logistics constraints	Contractor’s inability to acquire materials (e.g., clearing customs, delivery to the site)	Provide broad-based logistics analysis, planning, and execution	<ul style="list-style-type: none"> • Reduced schedule risk • Mitigated expediting costs
Remote labor workforce	Obtaining the “right” people and the “right” logistics; retaining skilled workforce	Implement workforce planning and training; develop labor assessment and plan	<ul style="list-style-type: none"> • Improved labor productivity • Mitigated risk of schedule delays
Contractor performance	Aligning contractor behavior to desired project outcomes	Facilitate alignment of stakeholders with project goals	<ul style="list-style-type: none"> • Improved productivity • Mitigated risk of project disputes
Personnel friction	Alignment and friction between EPFC and owner personnel	Improve alignment and reduce friction between personnel	<ul style="list-style-type: none"> • Increased productivity • Reduced inefficiencies
Ineffective status reporting	Functional snapshots of incongruent information used for reporting	Drive improvements to reporting through use of executive dashboards and key performance indicators (KPIs)	<ul style="list-style-type: none"> • Improved ability to mitigate risks and reduce delays • Improved productivity



Deloitte's capital projects practice

Improving capital project delivery

Industry focus: Deloitte's capital projects practice—dedicated to the oil and gas industry—provides specialized professionals and resources to assist companies with their efforts to enhance capital projects execution.

Experience with major capital programs: Our specialists have worked on hundreds of billions of dollars of capital projects around the globe, including some of the biggest and most challenging programs. Deloitte knows what it takes to help a capital project meet or exceed its goals.

Depth across capital projects lifecycle: Our capital projects professionals have real-world industry experience across the project lifecycle and with many stage gate verticals.

Access to a global network: Deloitte Touche Tohmatsu Limited member firms have thousands of specialists in its global network of member firms strategically located around the globe and is dedicated to helping many of the most prestigious owners and EPFCs improve their project performance.

Analytics capabilities: Deloitte helps oil and gas companies better leverage processes, technology, talent, and information through the use of targeted, analytics-driven roadmaps. Our innovative drilling and completions analytics solution may drive costs down and performance up. By applying data analytics to complex challenges, we help organizations effectively benchmark costs and performance against competitors, powering timely, data-driven decision-making.

Capital efficiency: Our risk specialists can help quantify the impact of project complexity and risk to enhance investment decisions. An effective approach to evaluate projects provides deeper understanding of risk and reward and enhanced decision quality in capital planning.

Predictive project analytics: Deloitte's Predictive Project Analytics (PPA) significantly enhances the effectiveness of traditional project management tools. By leveraging advanced analytics, we are able to assist clients and evaluate the likelihood that a project will be successful—followed with practical and actionable advice.

Tax knowledge and experience: Our tax specialists identify and implement tax-related efficiencies by centralizing specific management, risk, and capital intensive activities, while also developing an effective, local country transfer pricing methodology. This may result in potential cost savings from increased operational and tax efficiencies of central strategic, risk, and capital management.

Human capital insights: Our specialists have assisted capital projects in "traditional" areas, such as organizational effectiveness, sustaining change, training management, as well as 'people supply chain'—that is not only knowing what the required skills and people solution should look like, but also making it happen in a likely offsite, budget-constrained environment.

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The Deloitte Center for Energy Solutions (the “Center”) provides a forum for innovation, thought leadership, groundbreaking research, and industry collaboration to help companies solve the most complex energy challenges.

Through the Center, Deloitte's Energy & Resources Group leads the debate on critical topics on the minds of executives – from the impact of legislative and regulatory policy, to operational efficiency, to sustainable and profitable growth. We provide comprehensive solutions through a global network of specialists and thought leaders.

With locations in Houston and Washington, DC, the Deloitte Center for Energy Solutions offers interaction through seminars, roundtables and other forms of engagement, where established and growing companies can come together to learn, discuss, and debate.

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