Adapt to win

How Australian oil and gas companies improve productivity in challenging times

This report is produced by EY in collaboration with UQ Business School
April 2014
Executive summary

Operators, contractors and service providers in the Australian oil and gas industry face significant challenges. There is intense pressure to lift productivity: on megaprojects, across operations, and in the back office. In this, our second study on productivity and innovation, we collected and analysed data from more than 100 organisations. We found that companies with better “adaptive capabilities” are significantly more likely to achieve improvements in capital productivity (odds of 8:1) and labour productivity (odds of 16:1).

This is the second EY-UQ report on productivity and innovation in the Australian oil and gas industry. Our first report – *Delivering a step change in organisational productivity* – was well-received by the industry and its wider stakeholders. Leaders in the industry welcomed the report’s practical focus: on what managers and executives can do, each day, to increase their organisations’ productivity.

In framing this second report, we asked the same critical question which informed our first study: what are the drivers of productivity in the Australian oil and gas industry? To answer this question, we collected and analysed data from more than 100 organisations in the industry. In a powerful endorsement of the findings from the first study, we found the same three factors stood out:

1. **Innovation,**
2. **Competitive capabilities,** and
3. **Collaboration.**

This year, we are able to provide deeper insights into these drivers: Innovators do not cite external factors as barriers to their business success. In other words, innovators are impacted by constraints (e.g. red tape) but not to the extent that the constraints are seen as impediments to success. This is a powerful mindset to have. It became even more apparent when we looked at “novel innovators”. Novel innovators are those firms who have implemented solutions that are entirely new to the industry. When they were asked to cite barriers to their success, constraints were rarely mentioned at all.

Companies with better “adaptive capabilities” are significantly more likely to achieve improvements in capital productivity and labour productivity.
Organisations with stronger “competitive capabilities” enjoy better productivity. Critically, our new analysis deepens our understanding of competitive capabilities. We identified two key strands of competitive capabilities:

- **Comparative advantage** is a measure of how well an organisation rates, versus others, on key features such as: range of goods and services offered; depth of expertise in each good/service; supply chain management and integration; and its network positioning.

- **Adaptive advantage** is a measure of how well an organisation responds to changes in business conditions. It considers traits such as: flexibility; problem-solving; risk management capability; and ability to capture and apply lessons learned from previous business activities.

These factors both improve productivity, but the effect is different for each. In general, the presence (or lack) of comparative advantage explains whether firms improve productivity (or not). On the other hand, the amount of adaptive advantage directly relates to specific types of productivity improvements, namely labour and capital. Companies with stronger “adaptive capabilities” are significantly more likely to achieve improvements in capital productivity (8:1) and labour productivity (16:1).

We made a critical observation regarding firms conducting megaprojects (e.g. those with a capital spend of over $1 billion). Although these megaproject firms rate themselves highly in “comparative advantage”, they are very likely (92% chance) to rate themselves below average in “adaptive advantage”. Since we found specific productivity gains accrue to firms with higher than average adaptive capabilities, we feel there is a major opportunity being missed. That is, if megaproject firms can materially improve their flexibility, problem-solving, risk management, and use of lessons learned... then real improvements in their productivity can be expected.

“Collaboration” again ranks in the top three factors for positive impacts on productivity. Increased use of formal collaboration is strongly linked with increased productivity. The type of collaboration also matters – with positive results for horizontal collaborations (e.g. with peers, research organisations, academic institutions, and consultants) and vertical collaborations (e.g. collaboration between customer and supplier, and between contractors and their suppliers). Finally, it was evident that the best companies collaborate with a wide range of partners.
Interestingly, a key factor impacting collaboration is contracts. Specifically, a stand-out beneficial factor is “contract breadth”. Contract breadth refers to the range of contract types an organisation is using (e.g. lump sum, fixed price, cost plus, and reimbursable). Companies that use a wider range of contract types are significantly more likely to achieve productivity improvements than those that do not (6:1). Having a wider range of contract types may impose additional costs on firms, but these are clearly outweighed by the productivity benefits enjoyed when the right contract is aligned to the task at hand.

The clear and compelling findings from the study lead us to simple yet powerful recommendations. **To improve and sustain productivity, operators, contractors and suppliers should:**
- Measure and report on productivity;
- Define a productivity strategy, centred on innovation;
- Improve adaptive capabilities;
- Match your contract strategy with changing project risk profiles and environments; and
- Collaborate with more and different organisations.

Companies that use a wider range of contract types are significantly more likely to achieve productivity improvements than those that do not (6:1).
Productivity remains at the forefront of Australian political and economic debate. With sustained downward pressure on Australia’s terms of trade, there is increasing recognition that improving productivity is the only true path to improved living standards for the Australian population. Within industry, productivity improvement has emerged as one of the top three issues for boards and executives, with significant productivity programs launched in many Australian businesses. In the Australian oil and gas industry, challenges to productivity continue to gain significant attention while productivity improvement programs attract high hopes.

This is the second EY-UQ report on productivity and innovation in the Australian oil and gas industry. Our first report – *Delivering a step change in organisational productivity* – was well-received by the industry and its wider stakeholders. Leaders in the industry welcomed the report’s practical focus: on what managers and executives can do, each day, to increase their organisations’ productivity. The interest in the report demonstrated that it was a useful complement to other reports on productivity (often produced by economists) which, while very valuable to the industry as a whole, fail to inform individual companies on the specific things they can do each day to advance productivity within their own organisations.

**Productivity** is a measure of the conversion of business inputs to outputs. In the survey, we asked managers about the measurement of labour and capital productivity and how the business was performing against these measures. We also asked about the measurement of production efficiency and any other productivity measures that were being used. These questions allowed us to build a comprehensive profile of productivity measurement and performance for each organisation.
It is important to note that this second study is a stand-alone research piece. Nevertheless, it builds on the key learnings and insights gained in the first study:

- “Productivity” is again the central focus of our report. This time, we dive deeper into the specific types of productivity.
- “Companies” remain as the most important entities in the study. This is to ensure the insights and recommendations are relevant and practical, and lead to change within individual firms.
- Strong factual and analytic bias is retained throughout the study, using quantitative data and proven analysis techniques to ensure the report is more than mere “opinion”.

Improvements were made to this second study’s survey instrument so that we could capture even more data on the drivers, barriers and enablers identified in the first study. For example, we included questions to better understand the links between collaboration, innovation and productivity. We also wanted to examine how items raised in the first study (e.g. risk sharing, contracting conditions, and supply chain arrangements) might impact productivity.

Our field work collected data from 104 oil and gas firms in Australia (up from 80 firms in the first study). Similar to the first survey, respondents ranged from major oil and gas producers to smaller specialist firms serving the industry.

Not enough measurement, still.

The first finding is that most organisations are still failing to measure productivity. This comes as a disappointment given that the failure to measure productivity is still prevalent. There are immense gains to be made in organisational productivity within the Australian oil and gas industry.

Measuring productivity is an obvious and foundational first step on the way to improving productivity.

There is some good news, naturally. Of the organisations that do measure productivity, 52% report that they have improved their productivity (marginally up from 47% last year).

The primary drivers of productivity in the Australian oil and gas industry are innovation, competitive capabilities and collaboration.
The nature of this group of organisations is diverse and comprises:

- All firm types including owners, operators, contractors and service providers.
- Those involved in conventional gas, those involved in unconventional gas, and those involved in both.
- Firms working on megaprojects and those that are not.
- Firms large and small, new and old.

This group (those with improved organisational productivity) was analysed carefully to identify the key factors driving their productivity.

What drives productivity within Australian oil and gas firms?

To better understand the real drivers of productivity in Australian oil and gas firms is the primary purpose of our three-year research project. So in framing this second report, we asked the same question which informed our first study: what are the drivers of productivity? With significant additions to our pool of respondents*, we wondered if the same answers would surface again. In a pleasing and powerful endorsement of the first study, we found that the same three factors stood out.

1. Innovation,
2. Competitive capabilities, and

So, drawing on a robust set of more than 300 variables, we can assert that the primary drivers of productivity in the Australian oil and gas industry are:

* In our first survey, we had responses from 80 organisations. In this year’s survey, we have responses from 104 organisations – 35 had participated in the first survey (i.e. 44% repeat rate) while the remaining 69 organisations completed the survey for the first time.
While the headline results are consistent with the previous study’s results, this current study gives us deeper insights into the causes and effects of these drivers. We have also observed how these factors mutually reinforce one another to drive superior productivity performance. We explore these findings in detail on the following pages.

Finally, our survey this year included a more detailed section on barriers to productivity. As a result, this report is able to scrutinise one of the most cited barriers to productivity: “contract constraints”.

Figure 1: Companies measuring productivity and companies achieving productivity improvements
1. Innovation

Innovation again stood out as the most significant stand-alone driver of productivity. Innovators are more likely to achieve productivity improvements than organisations that do not innovate (9:1). A similar result was produced in our previous study. In both years, our analysis included examination of a robust set of likely contributors and detractors, including the ‘usual suspects’ of poor productivity.

With innovation featuring so strongly in both studies, we performed deeper analyses to ‘profile’ an innovator. We found that innovators:

- Are found in all parts of the supply chain, and also found in all basin types (e.g. conventional and unconventional).
- Do not cite external constraints (e.g. red tape, green tape) as barriers to business objectives.
- Do cite contracting constraints (e.g. lack of flexibility in incentive arrangements).
- Do cite learning challenges (e.g. finding and implementing new technology).

From this survey, we found that the cohort of productivity achievers and innovators is diverse and can be found across all firm types (e.g. owners/operators, contractors and service providers). The most remarkable feature is that innovators do not cite external factors when asked about barriers to their business success. Innovators are impacted by such factors (e.g. red tape), but not to the extent that the factors are seen as impediments to business success. The finding suggests that the effect of the ‘barrier’ is more dependent on the organisation than the barrier itself.

A Japanese proverb springs to mind: “Fix the problem, not the blame.”

“For me, the best innovative solutions have generally occurred when the client, the big oil and gas operator and the contractor work hand-in-hand. Generally, you don’t get the best innovative solution through the tender-box.”

Executive Manager, Service Provider
Perhaps, the notion of ‘thirst for learning’ is the key differentiator between those who innovate and those who do not. Innovators are generally better learners than non-innovators. Yet innovators remain dissatisfied with the learning they have achieved. A ‘yearn to learn’ mentality stands out as another marker of a truly innovative and productive organisation.

**Figure 2: Factors cited as barriers to business success**

<table>
<thead>
<tr>
<th>All respondents</th>
<th>General innovators</th>
<th>Novel innovators</th>
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<tbody>
<tr>
<td>Government regulations and compliance (red tape)</td>
<td>Skilled labour</td>
<td></td>
</tr>
<tr>
<td>Learning challenges</td>
<td>Increasing competition</td>
<td></td>
</tr>
<tr>
<td>Increasing competition</td>
<td>Management skills</td>
<td></td>
</tr>
<tr>
<td>Uncertainty of availability of future infrastructure</td>
<td>Social licence to operate</td>
<td></td>
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<tr>
<td>Contracting constraints</td>
<td></td>
<td></td>
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<tr>
<td>Environmental compliance (green tape)</td>
<td></td>
<td></td>
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<tr>
<td>Poor labour productivity</td>
<td>Environmental regulatory uncertainty</td>
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<tr>
<td></td>
<td>Lengthy project approval process</td>
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“If you interview someone and ask if innovation is important, they will say yes, but they might mean pipelines for gate-grids on farmland, I might be talking about drilling rigs and someone else might be talking about a new global industry like CSG to LNG. You actually need all of those things.”
Executive, Operator

Novel innovators … are different.
As we profiled our innovators, we noticed something unique about the “novel innovators”. Novel innovators are those firms who have implemented solutions that are wholly new to the industry. When they were asked about barriers to their success, constraints were rarely mentioned at all. This surprising finding deserves closer scrutiny. We do expect novel innovators to find creative solutions to particular problems. What is unexpected is that often, those solutions that novel innovators come up with somehow resolve all problems. This does not suggest that novel innovators operate in a different world, but rather, they operate on a higher plane. That is, where others see only barriers, innovators see opportunities. Red tape, green tape, problems in execution and the list goes on... these become ‘catalysts’ for innovation and perhaps even ‘pathways to productivity’. For novel innovators, this list of commonly cited issues is not perceived as barriers to productivity. Industry, take note.

Innovators in our study demonstrated how innovation can occur in many areas. The examples provided are grouped into six types of innovation.

<table>
<thead>
<tr>
<th>Types of innovation</th>
<th>Examples from surveyed firms</th>
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<tbody>
<tr>
<td>Product</td>
<td>• More efficient down hole pumps&lt;br&gt;• Drilling and completions technology&lt;br&gt;• Environmentally safe oil change technology&lt;br&gt;• Vehicle wash down water recycling system&lt;br&gt;• Vapour Recovery Units (VRUs)</td>
</tr>
<tr>
<td>Process</td>
<td>• Floating Liquefied Natural Gas (FLNG)&lt;br&gt;• Flux-core welding for cryogenic tanks&lt;br&gt;• Seismic acquisition and processing&lt;br&gt;• New pipeline installation methods</td>
</tr>
<tr>
<td>Supply chain logistics</td>
<td>• Modularisation of LNG construction&lt;br&gt;• Design for Manufacture and Assembly (DFMA)&lt;br&gt;• Advanced supply chain analytics for integrated logistics support</td>
</tr>
<tr>
<td>Service</td>
<td>• Rapid land rehabilitation&lt;br&gt;• Cloud based engineering drawing management</td>
</tr>
<tr>
<td>Service distribution</td>
<td>• Land owners trained as field service providers&lt;br&gt;• Remote monitoring and optimisation of well production</td>
</tr>
<tr>
<td>Management</td>
<td>• Training software/learning modules&lt;br&gt;• Human Resource (HR) development&lt;br&gt;• Improved business processes</td>
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</table>
Case study: Santos-APLNG infrastructure collaboration

With the high costs of construction, CSG-LNG operators are now turning to infrastructure sharing to improve the economics of their projects. In October 2013, APLNG and Santos announced a pipeline sharing deal that removed the need to build 140 kilometres of pipeline and extra connections at compression stations. This collaboration will save around $100 million in construction expenditure. Industry commentators say that more collaboration between the major operators will lift the productivity of the industry.

Case study: Laing O’Rourke and Kawasaki Heavy Industries

The demand for skilled labour has sky-rocketed in the Australian oil and gas industry due to the vast scale of current megaprojects. When Laing O’Rourke and Kawasaki Heavy Industries (LOR-KHI) won the engineering, procurement and construction (EPC) contract to build four cryogenic tanks for the Ichthys LNG project near Darwin, early risk assessment identified the availability of specialised welders as a major obstacle to productivity. With an overall mindset of using innovation to overcome project challenges, LOR-KHI searched for different welding methods that would be more automated and less reliant on specialist welders. Working closely with their own supplier, Lincoln Electric Co., an automated welding process previously developed for another application was found and trialled prior to tank construction. Using this adapted technology, not only was the project less exposed to labour risk but also the speed of welding was increased up to eight times faster than the standard approach, delivering significant productivity benefits.

2. Competitive capabilities

In our first study, “improved competitive positioning” was the second most important driver of productivity improvement. Nothing has changed: we still find that organisations with competitive capabilities far exceeding their peers’ also enjoy better productivity.

Critically, our new analysis provides for a richer understanding of competitive capabilities and positioning. We have been able to identify two key strands of competitive capabilities which we label as “comparative advantage” and “adaptive advantage” respectively:

- **Comparative advantage** is a measure of how well an organisation rates, versus others, on key features such as: range of goods and services offered; depth of expertise in each good/service; supply chain management and integration; and its network positioning.

- **Adaptive advantage** is a measure of how well an organisation responds to changes in business conditions. It considers traits such as: flexibility; problem-solving; risk management capability; and ability to collect and apply lessons learned.

"It’s all about communication. If a client says ‘I want a pipeline from A to B’ then we’ve got to look at different methodologies to see if there are savings. So it’s thinking outside the box. But always working with the client.”

Business Development Manager, Service Provider

**Figure 3: Impact of adaptive advantage on innovation**

Supply Chain Logistics (11.0)

Product (3.0)

Process (2.7)

Supply Chain Logistics: Technological improvements in supply, storage or distribution systems for physical product/technology

Product: Technologically new or significantly improved physical product/technology

Process: Technologically new or significantly improved methods of producing a physical product/technology
These factors both improve productivity, but the effect is different for each. In general, the presence (or lack) of comparative advantage explains whether firms improve productivity (or not). The amount of adaptive advantage directly relates to specific types of productivity improvements, namely labour and capital.

We believe the effect is due to strong links across adaptive capability, innovation and productivity. For example, firms with above average adaptive advantage are more likely to achieve supply chain logistics innovations (11:1). More generally, our analysis reveals that if you improve your firm’s ability to adapt, the odds are high that you will see a lift in your organisation’s labour productivity (16:1) and capital productivity (8:1). An interesting data point concerns those firms who are conducting megaprojects (e.g. those with a capital spend of over $1 billion). These firms rated themselves highly in comparative advantage, but are very likely (92% chance) to rate themselves below average in adaptive advantage. Since we found specific productivity gains accrue to firms with higher than average adaptive capabilities, we feel there is a major opportunity being missed. That is, if megaproject firms can materially improve their flexibility, problem-solving, risk management, and use of lessons learned — then they can expect real improvements in their productivity.

Comparative advantage comprises:
- Range and depth of expertise, product, service and technology offerings
- Supply chain management and integration
- Strength and quality of partner network

Adaptive advantage comprises:
- Innovative problem-solving within projects
- Ability to adapt to changing and unexpected circumstances in projects
- Documenting and transferring lessons learned across projects
- Rigorous project risk management
- Ability to execute projects in a timely manner
3. Collaboration and contracts

In our 2013 report, collaboration emerged as the third most important driver of productivity. We defined collaboration as the ability of the various industry players to design healthy, dynamic and resilient interconnected networks – capable of mobilising the right resources, at the right time, and to execute and innovate as hurdles emerge. In this year's study, we find that collaboration is once again a significant driver, coming in the top three for positive impacts on productivity.

Our analysis found a strong link between the number of formal collaborations and productivity: organisations in the top quartile (four or more formal collaborations) are more likely to achieve productivity improvements (2.6:1).

The type of collaboration also matters. Horizontal collaboration was found to be particularly important. Horizontal collaboration refers to collaboration with peers (including competitors), with research organisations, with academic institutions, and with consultants. In our survey, organisations with above average horizontal collaborations were significantly more likely to experience increased productivity. Vertical collaboration, for example, between customer and supplier, is also beneficial to productivity. The most prevalent examples occur between suppliers/contractors and their customers, where we find that collaborators are more likely to achieve productivity than those that do not collaborate (4:1). Conversely, we noted that less than half of the owners/operators in the study had formal collaboration with their contractors and suppliers.

Our analysis also confirmed that collaboration breadth matters. By collaboration breadth we mean the range of organisational types with whom you collaborate. The types include: customers, peers, contractors, suppliers, research organisations (e.g. CSIRO), academic institutions and consultants. We found that organisations with wider collaboration breadth were more likely to be above average in adaptive advantage (3:1). We have established earlier that adaptive advantage is the key missing ingredient for megaproject firms seeking productivity improvements. This gives rise to a specific and valuable finding: if your company is involved in megaprojects, increasing the breadth of your collaboration will lift your adaptive advantage and drive greater improvements in productivity.
In our first productivity study, “contract constraints” emerged as a barrier to success. In our second study, we asked additional questions about contracts in order to identify how they might help or hinder productivity. The result: 32% of respondents cited “contract constraints” as barriers to productivity, making it one of the most prevalent barriers in the study. Of these constraints, “scope changes in projects” and “inequitable risk sharing” stood out as key concerns. A number of our interviews suggest that poorly-designed contracts tend to contribute to an environment of distrust and inflexibility, resulting in a negative impact on innovation and collaboration.

Analysing the contract factors, we found that a stand-out beneficial factor was **contract breadth**, which is strongly linked to productivity improvements.

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Contract breadth refers to the range of contract types an organisation is using (e.g. lump sum, fixed price, cost plus, reimbursable). Specifically we found that organisations with above average contract breadth were more likely to achieve productivity improvements than those using a limited range of contract types (6:1). Having a wider range of contract types may impose additional costs on firms, but these are clearly outweighed by the benefits enjoyed.

Organisations get value from having a wide variety of contract types. This point was emphasised by the executives we interviewed. Without knowledge of the actual survey finding, the executives (from 10 different firms) independently stressed the importance of “having the right contract for the right purpose”.

Leading practice says that the key decision is to match the type of contract to the risk profile of the work being performed (refer to ‘The Diamond Approach’ model). Matching work-type to contract-type is a critical management activity – it is also a continuous one. That is, selecting the contract type is not a once-off “set-and-forget” exercise. Rather, there is a real need to critically and regularly review the portfolio of contracts being managed by a firm. The review should allow, where necessary, changes to contract management practices, changes to contract terms and even changes to contract types. Reviewing and changing contract factors is critical because the work itself is subject to adaptations and change; so too are the parties to the contract.

This approach (e.g. regular review and considered change) reverses the typical orientation of contract management, where the contractor and the work it performs are constrained to comply with an unchanging contract. Pro-actively adapting the contract is an alternative approach, and one clear path to improving productivity.

“Contracts can be both enabling and constraining for productivity. It depends what contracting strategy is used in which circumstance. If you pick the wrong one for the purpose, you get a sub-optimal outcome.”

Manager, Major Contractor
How Australian oil and gas companies improve productivity
Innovation, competitive capabilities, and collaboration are the key drivers of productivity in the Australian oil and gas industry. We make the following recommendations to all operators, contractors and service providers in the industry.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Details</th>
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<tbody>
<tr>
<td>Measure and report on productivity</td>
<td>Establish a productivity measurement and reporting regime. Use metrics relevant to your business including measures focused on capital, asset and labour productivity. Track performance over time. Use productivity measurement and reporting as a tool for communication and change on the broader productivity agenda.</td>
</tr>
<tr>
<td>Define a productivity strategy, centred on innovation</td>
<td>Define a formal strategy for productivity in your company. Place innovation at the centre of that strategy. Ensure that your workplace understands and fosters innovation, in all its forms. (For example, rollout ‘innovation training’ to your managers, supervisors and team members). Add ‘innovation’ to the agenda of your regular team meetings. Generate, select and exploit new ideas. Celebrate success. Make sure that your recognition and reward systems are aligned to the innovation and productivity agenda.</td>
</tr>
<tr>
<td>Improve your ‘adaptive’ capabilities</td>
<td>Define and execute a plan to improve the key ‘adaptive’ capabilities of: flexibility, problem-solving and risk management. (Example 1: rollout LeanSigma as a structured approach for problem-solving. Example 2: build up skills in risk identification, mitigation and management). Find and exploit lessons learned from other projects and other organisations. These steps are especially valuable for firms conducting megaprojects (i.e. with a capital spend over $1B). Improving adaptive capabilities will help you to unleash significant increases in capital and labour productivity.</td>
</tr>
<tr>
<td>Collaborate with more and different organisations</td>
<td>Review your existing collaboration arrangements (include both formal and informal collaboration in the review). Do not be afraid to rework (or retire) collaborations that are not working. Wherever possible, formalise collaborations. Ultimately, seek to increase both the number and variety of your formal collaborations (i.e. consider collaborations with customers, suppliers, peers, research organisations, academic institutions, and consultants).</td>
</tr>
<tr>
<td>Critically review your portfolio of contracts</td>
<td>Review your existing portfolio of contracts to ensure that you have the right contract for the right purpose. Recognise that changes in conditions may require changes to contract mechanisms. Ensure that contracts encourage risk-sharing, collaboration and innovation. Build up organisational capability in the use of differing contract types (e.g. lump sum versus cost plus). Regularly review contract terms and types, and use a streamlined decision process to consider and approve necessary changes. Establish continuous improvement within your project management and contract management teams, and ask your contractors to do the same.</td>
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</table>
Appendix

This report is produced by EY in collaboration with UQ Business School. The study methodology was designed by UQ Business School, drawing upon its extensive experience in a wide range of business strategy research.

The survey used for this study is based on the Innovation and Growth Survey developed by the Centre for Business Research at Cambridge University. That survey has been used and adapted over 20 years in the United Kingdom and Europe, and is designed to investigate factors that determine growth and performance in firms.

We collected data from 104 companies in the Australian oil and gas industry. Respondents represented a broad cross-section of the industry ranging from major operators and prime contractors, to smaller producers and specialist product/service providers. Most of the surveys were answered by C-suite executives. Ten in-depth interviews with operators, major contractors and experienced industry observers were also conducted to cross-check and validate findings from the data analysis. A profile of these firms and respondents from the survey is shown in the following figures.

Figure 5: Profile of participants in the study

<table>
<thead>
<tr>
<th></th>
<th>Involved in megaprojects</th>
<th>Not involved in megaprojects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operators</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Contractors</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Suppliers</td>
<td>27</td>
<td>15</td>
</tr>
</tbody>
</table>

Involved in megaprojects
Not involved in megaprojects
Figure 6: Title of person completing the survey

- Owner: 9%
- Board Member: 4%
- Executive (inc. MD): 39%
- General/Area Manager: 25%
- Marketing/Sales and Other: 18%
- Supervisor: 5%

Figure 7: Operational locations for participants in the study

- Queensland: 64%
- Western Australia: 59%
- South Australia: 31%
- Victoria: 30%
- New South Wales: 26%
- Northern Territory: 25%
- Commonwealth Waters: 19%
- Tasmania: 8%
- ACT: 1%
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