Think Ahead

ACCA

Oil and gas – priorities and challenges for the CFO enterprise

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Founded in 1904, ACCA has consistently held unique core values: opportunity, diversity, innovation, integrity and accountability. We believe that accountants bring value to economies in all stages of development. We aim to develop capacity in the profession and encourage the adoption of consistent global standards. Our values are aligned to the needs of employers in all sectors and we ensure that, through our qualifications, we prepare accountants for business. We work to open up the profession to people of all backgrounds and remove artificial barriers to entry, ensuring that our qualifications and their delivery meet the diverse needs of trainee professionals and their employers.

We support our 170,000 members and 436,000 students in 180 countries, helping them to develop successful careers in accounting and business, with the skills required by employers. We work through a network of 92 offices and centres and more than 8,500 Approved Employers worldwide, who provide high standards of employee learning and development. Through our public interest remit, we promote appropriate regulation of accounting and conduct relevant research to ensure accountancy continues to grow in reputation and influence.

This report summarises the key issues facing finance professionals in the oil and gas sector.

It considers what their priorities might be in their role of helping drive stability and growth in the sector.

Introduction

Concerns about environmental sustainability, shifting demand patterns, increasing risk and a changing supplier landscape continue to drive significant changes in the industry.

Turbulence is nothing particularly new to the global oil and gas sector. The end of the 1970s and the OPEC crisis witnessed significant spikes in the relative USD price. What followed was relative calm, with steady low prices throughout the 1990s. Prices then started to increase in the early 2000s, principally owing to demand growth in China. After 2005 there were dramatic price increases yet the 2008 global financial crisis may have had a significant detrimental impact on the price of oil, had it not been for demand continuing to holding up from fast growing emerging markets and specific supply-side measures being undertaken.

Yet in early 2015 we find oil prices at a six-year low, and the question that resonates across the global industry is this: how low can the price go, and for how long. Broadly industry commentators appear to be divided; some see this as the start of a longer period of lower prices, whilst others remain more optimistic, citing expectations that prices will start to rise in the shorter to medium term. It is too early to call, yet there are clearly a number of inter-related external factors influencing price points. Broadly there are a number of key issues influencing the future outlook of the global industry.

1. ENVIRONMENTAL SUSTAINABILITY

The longer term environmental sustainability of the oil industry and fossil fuel extraction continues to dominate the agenda, and there is growing scientific evidence on the relationship between the use of fossil fuels and climate change. With international commitments on global warming targets of two degrees, and growing interest in cleaner alternative forms of energy (as well as cleaner extractive processes), how the industry adapts to a greener future remains in the spotlight. Global interest in alternative non fossil based energy forms, regulatory disincentives (eg carbon taxes), and more localised and greener energy production activities will continue to impact the future of the industry.

2. SHIFTING DEMAND

In the Eurozone there are concerns of deflation (or at least zero inflation) and other leading economic indicators such as debt levels and unemployment rates are significantly challenging. Elsewhere the major Asian economies too are not witnessing the growth levels that they have become accustomed to over the last 20 years. As economies continue to mature, the relative shift to service economies from heavy industry has an obvious impact on the demand for fossil fuels. So consumption patterns continue to shift and evolve, with obvious consequences for global pricing levels.

3. GROWING RISK

In a 24–7 interconnected global economy, the fall-out from major environmental disasters for oil companies remains significant, and with major legal and financial reparation costs accruing, safety has become a number one priority for organisations across the sector. Yet it is the public face of enterprises that suffers most in the event of environmental disasters, and reputational risk is high with the proliferation of stakeholders with a vested interest in wider enterprise performance. There are other risks facing businesses in the sector too; many continue to operate in war torn jurisdictions, or in areas where geopolitical tensions and border issues prevail such as central Asia/Ukraine, providing significant macro level political uncertainty. Other newer oil exploration territories may be politically unstable or

under-developed such as some African markets, lending new risk, tax and permit premiums to exploration activity, and recalibrating the investor risk – return ratio.

4. SUPPLY SHIFTS

Finally there are significant changes across the supply side of the industry, and the costs of exploration continue to change. On the one side, we can expect technological innovation to continue to put downward pressure on the exploration costs, and better technology is enabling oil enterprises (often smaller exploration companies) to start to exploit less conventional sources. In the UK the agenda is dominated by the fracking discussion, and the US exploration of shale in particular is changing supply side dynamics owing to shorter exploration and production times, We can expect further interest in these exploration alternatives as traditional sources of energy exploration become more inaccessible to extract, or where the technology is still not available to make this happen in an environmentally sound way. Here the issue of stranded assets is particularly relevant for the industry as the environmental cost of extraction is too high, and many currently known reserves of carbon will have to remain in the ground. Exploration activity is changing too in the sense that many new 'finds' are made by smaller, less capitalised junior explorers in new, previously unexploited fields. The industry has also seen more corporate finance activity through acquisition and joint ventures between bigger and smaller players, driven by the changing risk profile of investors, less appetite for risk, and the need to secure appropriate financing as financing sources across the industry proliferate.

OPPORTUNITIES IN THE CURRENT CLIMATE

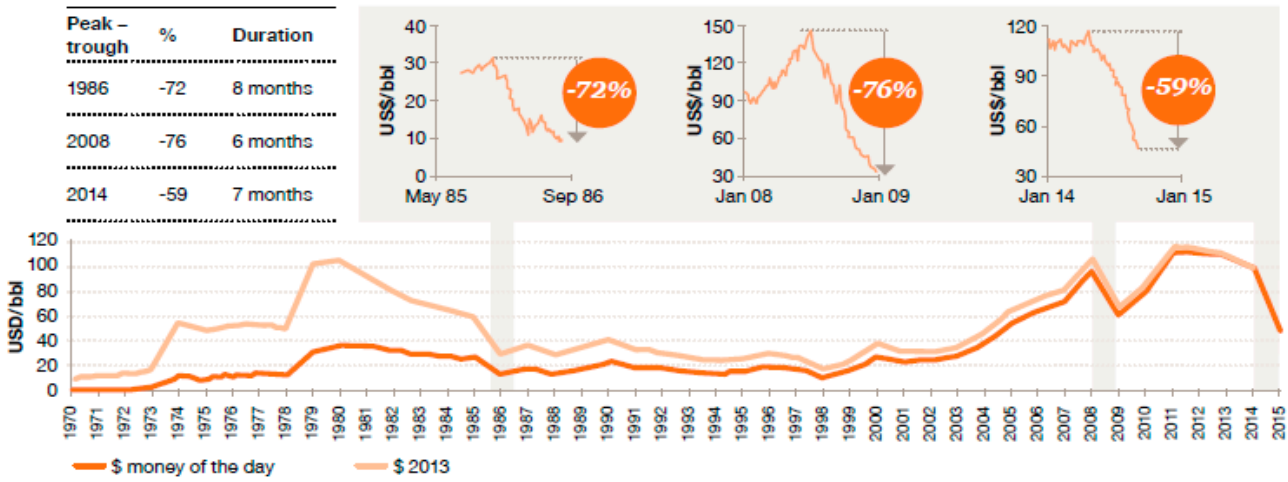
The chief financial officer (CFO) function has a critical role to play in safeguarding the longer-term prosperity of oil and gas enterprises.

From ensuring excellence in the stewardship, governance and risk management of the organisation, running finance activities as efficiently and effectively as possible, extracting maximum value from capital funding activities for the enterprise, and driving analysis and insights that support better investment choices and commercial decisions, the role of today's finance professional in the sector is critical. It is brought into even sharper focus by the significant turbulence and volatility we are now seeing in the oil and gas market.

There are seven key issues at the top of the finance agenda right now:

- volatility hitting the cost base and impacting capex
- pressure on forecasting and decision support capabilities
- corporate reporting challenges
- asset impairment and stranded assets
- capability and talent
- funding
- cyber security and penetration testing.

Figure 1: Structural downward price corrections in the oil market (1986, 2008 and 2014)



Source: *BP Statistical Review 2014*, Datastream, PwC research.

Climate change and risks to the oil and gas sector

The havoc wrought by cheap crude on oil companies may be only the beginning.

Climate change will 'profoundly affect the economics of the industry', a group of institutional investors will contend on Friday. With risks mounting, they are urging energy companies to better disclose how environmental factors will change companies' bottom lines.

In a letter to the Securities and Exchange Commission to be announced Friday, 62 investors ask for better monitoring and disclosure of 'material risks' to energy companies. They argue that rising exploration costs, renewable oil alternatives and carbon regulations will squeeze profits enough to warrant more transparency in financial filings.

'Throw that in with much broader investor awareness and support for better evaluation of these risks, and we're in an entirely new ball game', said Shanna Cleveland, senior manager at environmental advocacy nonprofit Ceres, which organized the letter.

Transparency is crucial, she said, as more investors consider climate risk in their strategies. The letter outlines initiatives such as the Montreal Pledge, a commitment to measuring and disclosing the carbon footprint of companies in investors' portfolios.

'Meeting climate challenges must go hand in hand with ensuring that Americans have the affordable and reliable sources of energy necessary to grow our economy' – American Petroleum Institute

Cleveland said that on Thursday BP [had] adopted a shareholder resolution for better carbon-risk disclosure.

The Carbon Tracker Initiative estimates that oil and gas companies will spend more than $1 trillion on exploration projects from 2014 to 2025. Those will require at least an $80 per barrel break-even price, well above where US crude oil currently sits, at around $56.

Cheap oil effectively creates a stress test for planning projects under future climate pressures, the letter says.

The decreasing viability of exploration projects comes as oil demand is projected to fall and the European Union, United States and China, among others, have pledged to reduce greenhouse gas emissions. Those converging factors form 'known trends' that should be disclosed under SEC regulations, the letter argues.

SOURCE: CNBC, 'AS CLIMATE RISKS MOUNT, OIL INVESTORS WANT TRANSPARENCY', 17 APRIL 2015.

Issue #1. Volatility hitting the cost base, and impacting capex

Management of the cost base, and scrutiny of the efficiency of investment programmes is now critical.

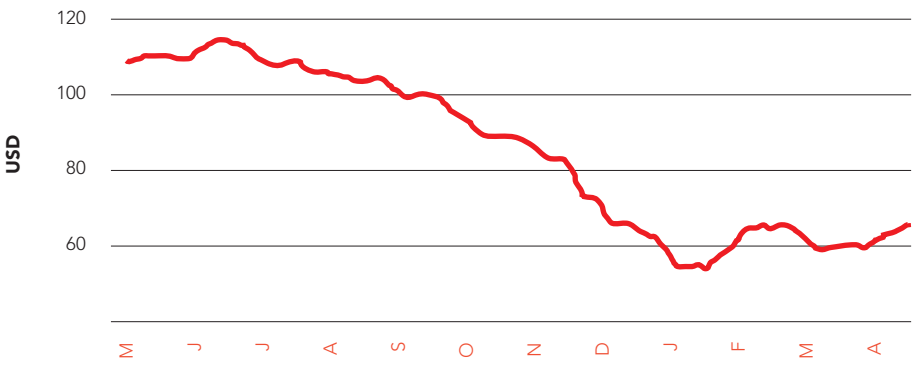
The response of oil and gas businesses to the huge fall in prices recently witnessed is having a significant impact on the role of the finance organisation. The problem is this: no one is entirely sure about when the price can be expected to rebound, and commentator estimates vary from the more immediate future (next 12 months) to a much longer time frame – 'the how low, and how long' question resonates across the industry.

It is no surprise, given the volatility in the market, that management of the enterprise cost base is a key priority for the finance function. For some markets, part of the cost base problem is historic, exacerbated by oil basins that are relatively mature and where the infrastructure is degraded enough to warrant significant expensive upkeep. In addition, in the good times, other operating costs such as salaries have sometimes reflected the sentiment in industry, which has contributed to making operating costs expensive for many enterprises in the sector.

Many CFOs will continue to undertake significant cost reviews to identify which costs can be cut, and which expenditure is necessary to ensure 'business as usual' operations. Part of the challenge for the finance team here is the need for a deep understanding of the nature of the cost base, and clarity about which costs can be reduced without necessarily affecting future growth or performance. As always, the challenge in the industry is to balance short-term against long-term trade-offs, but there are some prominent areas that are most likely to attract attention in a review, particularly the more discretionary spending on areas such as training, or the use of contractors. In addition, finance teams are likely to spend more time considering the structure of working capital and trying to improve the liquidity fundamentals.

Longer-term investment programmes and the efficacy of capital expenditure activity are other significant priority areas. With the trade-off between short-term priorities and long-term opportunities

Figure 2: Brent crude oil prices – 12 months to 21 April 2015



Source: *Financial Times*, Wednesday 22 April 2015.

ever present in the industry, finance professionals have a more critical role to play than ever in judging which investments will continue to be needed to protect longer-term revenue streams and those that can be cut. In the market today there are many examples of capital expenditure programmes that are being either cut or, at least, deferred, reflecting the prevailing market conditions.

In the push for significant cost savings, and as the cost of acquiring new reserves falls owing to diminishing share prices and oil prices, the other key activity that we may now see is a major upturn in mergers and acquisitions, and naturally the finance department has a critical role to play in both pre- and post-merger acquisition activity. In early April 2015 Royal Dutch Shell announced a proposed £47bn takeover of BG group, yet opinion is divided as to whether this heralds the start of major acquisition activity across the industry. Much of this depends on the extent to which particular enterprises have hedged their future barrel sales at previous higher prices, but there is some noise in the market to suggest that refinancing costs are generally increasing for many companies with significant financing debts, reflecting general investor concern in the oil market.

Major oil and gas operators will shave $140bn (£94bn) off their capital expenditure budgets in 2015, following the fall of over 50% in the price of crude oil over the previous year, according to research by RBC Capital Markets.

Telegraph, 24 March 2015.

Issue #2. Pressure on forecasting and decision support capabilities

The effectiveness of planning and forecasting, and decision support activities are now in the spotlight.

Other key priorities for the CFO function in the sector are the effectiveness of the planning and forecasting processes, and the need for more effective commercial decision support. Rebalancing the resources and time spent on attempting to predict the future environment more accurately is critically important given the volatility in the market.

Simon Constant-Glemas, vice president of finance at Shell explains: 'As finance, we want to operate in a space that indeed reports the future, and to do that we need to better understand what it is that we need to report about the future. In the past we have used historical information to try and provide insight, which in the world that we live in today is so far out of date – even if you do improve the processes such that you can provide information quicker, if you are using only past data the information will still be meaningless for driving the future performance of the business.'

Nicholas Stevenson, oil and gas partner at PwC adds: 'Clearly, there is a lot of focus on prospective financial information at the moment. As an audit partner I spend a lot of my time looking historically at financial information, but what's really interesting about the last few months is that I've spent much more time with clients looking at prospective financial information; it's about budgeting, it's about forecasting, it's about understanding what this new price environment really means for the business'.

One area of concern in forecasting future outcomes is the efficiency of capital expenditure programmes. Stevenson comments: 'I think the industry has a patchy track record in executing cost-effective, to-budget capital expenditure programmes. The investor community has been worried for some time about the industry's track record, and investors were giving oil and gas companies messages two years ago around the capex getting

out of control. The industry has a track record of costs rising in times of high commodity prices, and you can see that [reflected] in some of the overspends that have been witnessed in the capital expenditure projects. The reduction in commodity prices has brought real urgency to that debate'. He goes on to add 'being able to tweak different models to different price environments or different hurdle rate assumptions is really important. The resource allocation for oil and gas companies right now is essential. The pool of funding has shrunk and therefore making tough choices is going to be really important in the next few years, so having accurate prospective financial information to make those decisions is going to be really important'.

There are other issues that also affect the planning and forecasting process, particularly capital expenditure. With growing interest in the new forms of energy and renewables (the US shale gas revolution is of particular note), as well as the proliferation and emergence of new geographies for exploration for traditional oil and gas resources (albeit typically reserves that will be harder to access) the investment and risk landscape continues to evolve, driving a need for more effective scenario planning and financial modelling. On the flip side, decommissioning of mature fields is increasing and the cost forecasts are escalating, raising sustainability concerns. All these issues affect the role of finance professionals in assessing enterprise finance opportunity, and in accounting for and reporting on these developments.

In delivering wider business decision support activities, the challenges CFO functions in the oil and gas sector face are similar to finance challenges in other industries. In ACCA's report, *Tomorrow's Finance Enterprise*, technology and data are identified as two of the key issues impacting the effectiveness of finance in providing the quality of decision support needed. Like other sectors, in oil and gas finance teams still face barriers to gaining credible data on the activities that drive enterprise value. For many finance functions there is no single interpretation of the available data across the enterprise and data governance processes remain a challenge, yet the pressure remains from data-hungry executives for ever-quicker information from the finance team. Finance has to get better at articulating the outcomes it is trying to achieve and using the right data to enable effective reporting.

Access to the right data is one thing, but leading finance functions also need to prioritise investment in technology to tap into the most relevant data and help drive value, and digital technologies in the sector can be expected to increase in importance as a core finance leadership enabler. ACCA research has consistently demonstrated the limitations of prevailing technologies in many finance organisations, and new technologies are central to driving richer information insights and supporting greater collaboration across the enterprise. However, in practice, many finance teams continue to struggle, risking inaccuracy and low confidence in the numbers.

Issue #3. Corporate reporting challenges

Investors are becoming much more selective; quality and transparency of external corporate reporting across the industry is now vital.

Although one challenge is providing the internal information that enterprises in the sector need, oil and gas companies currently face many external corporate reporting issues as well. Pension cost accounting for defined benefit schemes is always a difficult and complex area. For example, judgements are required about actuarial assumptions on mortality, future salary increases and length of service. Judgement is also needed when deciding the appropriate discount rate to use during a period of prolonged general low interest rates but with pronounced differentials between government and corporate bond rates in some countries. Many oil and gas companies were in existence with large workforces at a time when defined benefit obligations were more common than now.

In relation to corporate reporting standards, two major new standards were published in 2014 affecting companies whose accounts are prepared under either US GAAP or IFRS – revenue recognition (IFRS15) and financial instruments (IFRS9). These have application dates in 2017 and 2018 respectively and so are being assessed for impact by oil and gas enterprises, as by all other companies. The impact of the first may be reduced by the typically clear-cut physical delivery of the oil or gas involved. The impact of the financial instruments standard is likely to be principally in the relaxation of some of the hedge accounting restrictions. In common with enterprises in other sectors, accountants working in the oil and gas sector have had to take notice of the more innovative approaches to non-financial reporting, including integrated reporting, that have been developing to improve the dialogue between companies and their different stakeholders.

While both the above issues are generally relevant to all sectors, certain reporting issues seem of particular significance to the oil and gas sector. Generally, accurate and meaningful corporate reporting on key performance metrics highly relevant to the industry, such as production volumes, cash, pricing and reserves, and replacement cost accounting (and related profitability reporting), is essential for the investor community and affects the perception of management quality. Investors are becoming more selective, particularly with the recent price volatility in the market, rising development costs, increasing geo-political risk and a more competitive situation.

Some reporting issues have existed for some time: for example, the treatment of exploration costs. For those using IFRS, the current version of IFRS4 makes few restrictions on the extent to which these may be deferred or treated as part of the cost of exploration of properties. At the one end there have been successful efforts to assess recoverability on a well-by-well basis and, at the other, to capitalise all such expenditure under the full cost method. In between, a variety of methods are also used. Likewise IFRS4 allows comparable variability when it comes to assessments of impairment.

Perhaps more than in other sectors, the reporting of certain non-financial information for oil and gas companies has been almost equal in importance to that of earnings. The disclosure of the different categories of reserves and resources (for example, proven, probable, possible) is critical information that analysts consider. The most significant information is often captured in the reserves replacement ratio, which tracks the balance between finding new reserves against the depletion of the assets due to production.

Some of the sector-specific issues are also very current. Owing to the nature of the industry and the way it has developed, joint arrangements (joint ventures set up as separate entities, production sharing arrangements, etc.) have been very important. IFRS11 changed the accounting framework within which these organisations reported and there have been some continuing clarifications and amendments made to the standard that need assessment against the particular agreements a company may have.

The other issue concerns the greater demands of transparency placed on the sector (along with mining companies) to show the value of payments to governments. This has appeared, for instance, as part of the Dodd–Frank Act in the US and in the Accounting Directive of the European Union. The different sorts of payment will need to be disclosed – taxes, royalties, infrastructure contributions and so on – and on a granular basis. It was referred to as 'country-by-country' reporting but it might sometimes be better described as 'project-by-project' reporting.

Issue #4. Asset impairment and stranded assets

The issue of stranded assets is dominating the agenda across the global industry.

The decline in the oil price in 2014–15 has also increased attention on the issue of impairment of assets. It has challenged the comfortable assumption that the historical costs of exploration will be exceeded by the value of the oil that can be extracted. Price volatility has always been a fact of life for the sector but the current prices are potentially a 'trigger' for carrying out impairment tests. Equally, the large change in price is making it much more difficult to estimate the longer-term price expectations that are needed for value-in-use calculations. Upstream, recent investments in unconventional resources such as tar sands and deep-water fields may no longer be justified by current prices for crude. In some regions these changes have been combined with longer-term excess capacity issues that are triggering the impairment of refining and other downstream assets.

The potential impairments raised by the oil price collapse mirror the concerns that some investors have already been raising about 'stranded assets' that the sector may have, i.e. assets worth less on the open market than their balance sheet values. Estimates show that many of the currently known reserves and resources of carbon will have to remain in the ground and will never be sold and burnt (if the internationally agreed global warming limit of 2°C is not to be exceeded), unless technologies are developed to capture the waste gases. Companies owning or exploiting these reserves may need to recognise their worthlessness, including writing them off. This issue almost certainly affects the coal industry more than oil and gas, but both are involved. The climate change issue brings into play the debate on alternative forms of energy and developments in governmental and regulatory policies that could have an impact.

The other issue to contend with here is the increasing reaction of institutional investors. In some quarters, concern continues to grow about the investment potential of enterprises that have invested heavily in carbon, and there might be growing scrutiny of the risk exposure of enterprises from the investor community. In response, many of the major oil companies continue to point to growing global demand for fossil fuels and the need to continue to meet global energy demands that for the foreseeable future cannot be met by alternative forms of energy.

Nicholas Stevenson from PwC comments: 'The biggest issue facing the industry is impairment. With oil and gas prices falling, I think there is an expectation in the investor community that we will see impairments as we go through the season. But it's a more much subtle and differentiated topic depending on the nature of your assets and where you are operating. An upstream producer that has short term assets is going to have some impairment issues whereas longer-term assets where the cash flows will take 30 or 40 years may not be so prone if you think oil prices are going to recover in the short to medium term'.

Dealing with the risks of stranded assets

Drivers of asset stranding include water scarcity.

Companies in the mining, oil and gas sectors are ignoring a big risk to their valuations and predictions of future revenue.

This is the risk that assets will become stranded, unexpectedly losing all or most of their value due to external events. Given increasing consensus that as much as 80 per cent of proved fossil fuel reserves will have to be left in the ground to avoid catastrophic climate change, this risk should not be dismissed lightly.

This is why F&C [Foreign and Colonial] Investments, the UK fund house, has put stranded assets high on its agenda, according to its annual responsible investment report. Over the past year, F&C has been working to make sure senior executives in the oil and gas, mining and utility sectors are aware of the concept.

'Many companies continue to focus on short-term risk management in response to the current weak oil price, rather than a robust long-term risk management approach that considers climate change policy risks', says the report.

Although individual analysts at companies may be aware of the issue, frequently the awareness stops there, rather than rising to the board.

'It needs to be a strategic board-level discussion', says Vicki Bakhshi, head of F&C's governance and sustainable investment team. 'It is a risk management question, it is a stress-testing question'.

The issue of stranded assets may not yet be at the forefront of the corporate board's mind, but its profile is growing quickly in the investment community.

When FTfm [FT Fund Management] covered this topic four years ago, with specific reference to fossil fuels, it was easy to find commentators to scoff at the idea. It was seen as an ideological proposition driven by climate-change campaigners.

By contrast, in 2015, mainstream outfits such as MSCI, the stock market indices provider, and Towers Watson, the consultancy, have put out discussion documents on the topic, while Oxford University's Smith School of Enterprise and the Environment has a programme dedicated to systematic analysis of the subject.

The director of this programme, Ben Caldecott, says investment managers are slowly coming to terms with the new landscape: 'There are some real leaders, but there are lots of investment managers who do not really know what they are doing. There is lots of research showing this stuff is financially material [but they have not yet integrated it into investment processes]', he says.

An understandable preference for looking for opportunities instead of mitigating risks may be to blame for investment managers finding it tricky to engage with the issue, Mr Caldecott suggests.

'With climate change, there is a risk/opportunity division. A lot of attention has been on the opportunities. But on the other side, [stranded assets] throws up a whole range of issues about how to preserve value in sectors undergoing major change'.

The leaders named by Mr Caldecott are Wheb, Impax Asset Management and Generation Investment Management, all asset managers set up with environmental, social and governance issues at the forefront of their investment philosophies. To truly enter the mainstream, the idea of stranded assets needs to be taken on board by investment consultants.

'You also have to look at the role of investment consultants', says Mr Caldecott, 'And you have to ask whether they have the understanding needed'.

The preliminary findings of a Smith School report due out shortly imply that investment consultants 'need to man up on this issue', he says.

[Management consultants] Towers Watson would disagree, having put out a 14-page report on the topic in January. The report looked only at probable restrictions on carbon emissions (other drivers of asset stranding might include water scarcity, pollution limits and policy changes such as abandoning nuclear fuel). It attempted to consider a range of scenarios and assess the potential impact on the entire value chain, down to residential electricity use.

The time horizons of investment as well as risk are significant – there may be a high risk of asset stranding within 10 years, but if an investment horizon is two years, it is immaterial. Likewise, if the payback time on an asset is short (shale gas investments, for example, are expected to pay back within a couple of years), you might not care about a problem likely to arise by 2020.

SOURCE: *FINANCIAL TIMES*, 'INVESTMENT CONSULTANTS TOLD TO 'MAN UP' ON STRANDED ASSETS', 22 MARCH 2015.

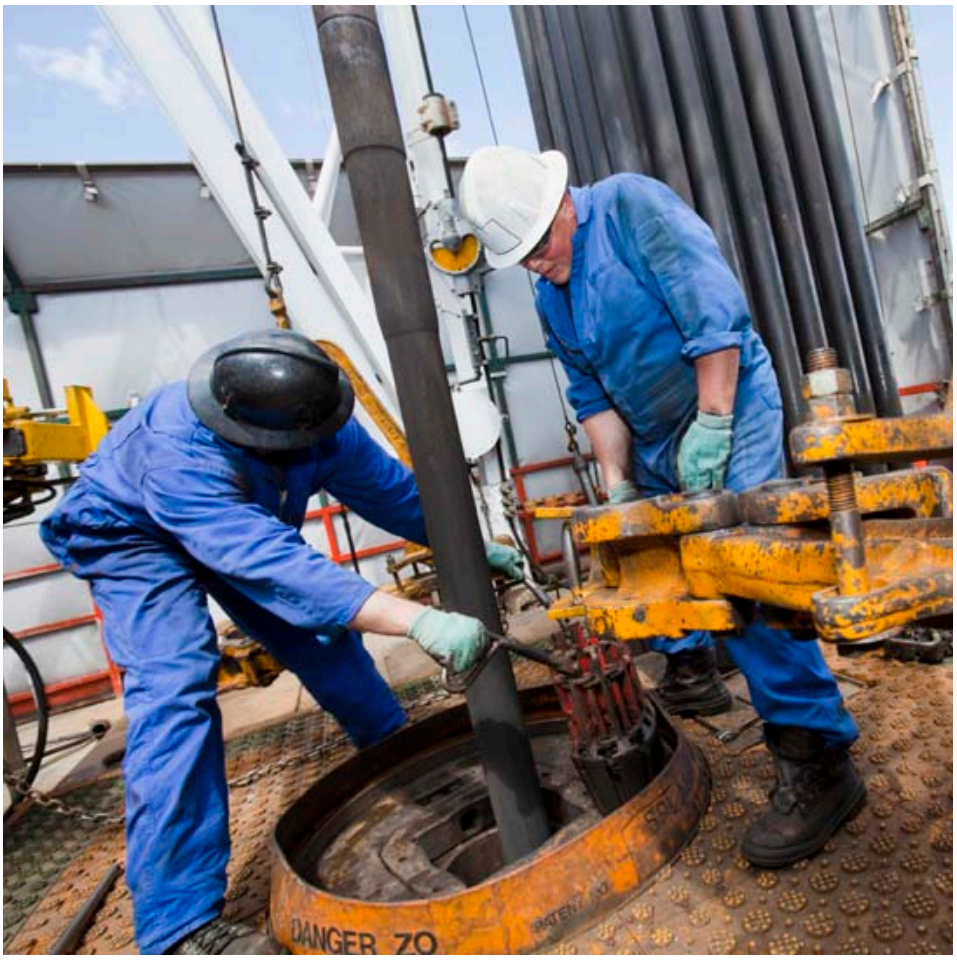
Issue #5. Capability and talent

Access to the right talent is a key priority for CFOs across the oil and gas sector.

If there is one issue that is causing sleepless nights for CFOs and other finance leaders in the sector it is the issue of talent and capability. Many of the world's leading oil and gas organisations have been front runners in transforming the finance organisation to drive down cost, improve process standardisation, achieve the scale and agility to support flexibility, and critically to gain better control across the enterprise.

Simon Constant-Glemas from Shell says: 'On one hand, it is the operation of our core financial processes, being custodians of the control framework and understanding risk management that is our licence to operate and we need to get that right first time to earn the credibility to play in any other space, and having got that right, then you can move into the more value adding areas of finance such as decision support and performance management…but we should not forget that there is a lot value in getting the basics right, we get well paid to make sure the numbers make sense and along with professional judgement a lot of that comes from the execution of processes right first time.'

Strong controllership provides the mandate for the function to gain access to what some see as more added-value finance business partnering activities that typically take place in the retained finance organisation. Yet it is here that many finance teams continue to struggle with the existence of shadow finance organisations and a paucity of the skills needed for the insight and commercial support required.



ACCA and IMA have previously reported[1] three key solutions in making financial business partnering work effectively from the perspective of the people involved.

1. Creating effective structures – creating appropriate finance business partnering structures was identified, in a CFO survey conducted by ACCA and IMA, as a key priority. The fundamental question is this: should these resources have reporting responsibilities into finance only, or be embedded in the business with reporting into business leadership, or should there be some hybrid model? The trick is to ensure that the finance team retains its independence and objectivity yet is 'close enough' to the business to understand its fundamental commercial realities.

2. Investing in the capabilities that matter – many finance enterprises continue to under invest in developing the capabilities that matter among business partners; rotation and mobility programmes and exporting finance talent into the broader business to build commercial capabilities, the establishment of clear competency frameworks, coaching and mentoring practices, and recruitment from disciplines outside traditional accounting roles.

3. Changing the finance mindset – the ACCA–IMA study emphasised the behaviours, attitudes and mindsets that are as essential as specific skills to future success in business partnering. This includes the capacity for finance business partners to challenge the business and bring that independent vision to its commercial decision making, and the desire to create effective relationships outside the finance function. With so much volatility in the oil and gas sector at present this is a particularly relevant issue, and finance teams need to be able to operate successfully in an environment which may be more ambiguous and uncertain than they have previously experienced.

Yet the real unspoken talent question is this. For major oil and gas enterprises that have continued to offshore entry and mid-level finance roles, where will the future finance leadership team come from? The traditional talent equation has been disrupted, putting a new strain on how these future finance organisations will attract, develop and retain talent in future. Critically, the issue becomes one of mobility, and how enterprises can secure sufficient exposure of finance talent from delivery centres into the retained organisation and vice versa. Perhaps a two-tiered approach to off-shoring will emerge, with transactional finance activities being run from traditional shared service centres while higher-value finance activities are consolidated into dedicated hub centres of excellence. Whichever model is adopted, the implications for developing the next cohort of global finance leaders in the sector are significant.

Perhaps the current crisis in the sector provides finance teams with an excellent opportunity to demonstrate the value they bring to the enterprise, from driving cost efficiency programmes, providing superior commercial decision support, ensuring more effective longer-term capital expenditure and financing activities, and bringing increased transparency and understanding of future enterprise performance through improved corporate reporting to the investor and wider stakeholder community. What is absolutely certain is that future finance teams in the oil and gas sector will need a wide range of technical, leadership and management skills to hold the seat at the table and demonstrate their continued value to the enterprise. In the oil and gas sector, as with other leading sectors, finance functions need to think through very carefully how they 'future proof' the talent needs of the function, and what the demands of the future enterprise will be.

1 *Financial Insight: Challenges and Opportunities,* ACCA and IMA, October 2014.

Issue #6. Funding

With less reliance being placed on traditional bank loans new sources of funding are increasingly available in the market.

By many standards, the approach of the oil and gas industry to financing its activities has been conservative; traditional bank loaning has been the bedrock of capital provision across the industry, with total global fund raising across the sector at the end of 2013 approaching $1,000 billion per year.[2]

Yet today the industry is seeing an increasing proliferation of funding options, with less reliance being placed on traditional bank loans, and new sources of capital increasingly available in the market. Finance professionals across the sector and in all sizes of organisation have a significant role to play in helping the enterprise source the most effective forms of financing for the business. There is more competition for access to capital but also a wider range of finance providers in the marketplace, and the CFO organisation needs to become increasingly familiar across this diversified portfolio.

The proliferation of capital sources that we are seeing is not surprising. With growing uncertainty on future revenue streams across the industry, there remains significant 'tightness' in traditional banking lending controls. Moreover, as previously mentioned, the sector faces ongoing infrastructure, logistics, environmental and social challenges. Significant price volatility is driving much greater diversification of sources of finance, and the sources of funding used at different stages of the investment life cycle is also continuing to shift. From traditional bank loans and public and retail bonds through to more complex mezzanine finance, specialised energy funds, sovereign wealth funds and other emerging sources of capital, financing options are becoming increasingly complex.

Historically, the larger global oil companies have relied heavily on cash flows for many of their funding activities, yet the downturn of 2014 has now placed significant challenges on how they can now efficiently fund many of their activities, and in the present environment they must continue to look to balance their investment programmes carefully; it places new strains on their effectiveness of their working capital processes and the efficiency of existing banking arrangement must now continue to fall under review.

For the increasing number of smaller and medium-sized independent enterprises in the sector, the challenge of funding is particularly acute. With no demonstrable longer term track record in the industry, there is less visibility to the investment community of the inherent investment risk. Typically these businesses have less substantial cash flow evidence on which investors can price in the risk of the investment, or they may be operating in incredibly niche markets or narrow geographies which inhibits the opportunity to hedge, they may simply not have the scale of operations or hold sufficient assets which provide investors with the required assurance levels; in short some investment wariness persists.

2 *Funding Challenges in the Oil and Gas Sector,* Ernst & Young, 2013.

Issue #7. Cyber security and penetration testing

Cyber security risks are a growing threat to organisations in the sector.

The management of risk is synonymous with the oil and gas industry, and safety remains a critical priority for all enterprises in the sector. The industry has significant security needs, reflecting the complex nature of its activities, and its operating footprint, and breaches can quickly impact brand reputation and destroy corporate value. It is because of this that enterprises in the sector continuously maintain extremely high levels of due diligence, and invest significantly in putting procedures in place to safeguard operational activities and mission critical information systems.

Cyber security risks, attacks on the proprietary information and the intellectual property of the enterprise by 'hacktivists' are, however, a growing threat to organisations in the sector, and are increasingly high up on the risk management agenda. In an industry which is currently facing significant economic challenges, and a continuous focus on cost management, CFOs must work closely with CIOs to understand the sufficiency of the control environment and strike the right balance in prioritising control initiatives and audit activities in this critical area at an efficient cost.

Across the industry there is growing interest in the application of 'penetration testing' to test the sufficiency of the existing control environment, to ensure enterprise regulatory requirements can continue to be met, and to provide early warning systems on known IT security flaws. Essentially penetration testing copies the actions of would be system hackers. Using manual or automated technologies, its purpose is to breach the security of the targeted information or operating systems, identifying prevailing gaps and sometimes going 'deeper' to achieve higher levels of fraudulent security clearance. By undertaking this type of 'detective' testing the enterprise can better understand how future attackers could gain access, and where weaknesses in the system control environment are present.

Typically penetration testing focuses on a number of core areas including:

- enterprise networks including servers, routers and firewalls
- Web applications
- wireless networks
- mobile and wireless devices
- in-house developed applications and off-the-shelf software.

Aside from the general cyber security risks posed by potential hackers, with the need to ensure ongoing regulatory compliance through appropriate control and reporting systems, the CFO will be particularly interested in the protection of 'core processing' systems which hold finance and operational enterprise data, particular ERP systems and general ledgers, as well as bolt on analytics and business intelligence systems to facilitate decision support activities. However, the finance system landscape continues to evolve; ERP upgrades and consolidations are prevalent, and the finance organisation continues to look to cloud-based and software-as-a-service options to supplement existing technology infrastructure, all of which introduce potential new risks and control flaws into the cyber security equation.

The other issue is the extent to which the business has the appropriate skills and capabilities in penetration testing, and where ownership rests for leading penetration testing activities. With increasing concerns in the industry, and a growing sophisticated threat of security breaches, oil and gas enterprises are looking to the external market to source specialised expertise in vulnerability assessments and penetration testing. As with all outsourcing arrangements, rules of engagement and risks relating to production testing and data management need to be managed carefully.

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