

**From volume
to value:
the transformation
of National Oil
Companies**



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Hydrocarbon-driven economies in emerging markets

The unfortunate convergence of increasing oil supply and weakening global demand has created an oversupplied market and caused a sharp and sustained decline in international crude oil prices. From its last peak in June 2014, crude oil prices have declined by over 55%¹ during the last thirty months. The recent agreement between OPEC and non-OPEC producers to cut output has provided much needed reprieve to the oil market by setting a floor price. However, we do not see that this development will change our outlook of longer-term low prices.

For many emerging economies heavily dependent on oil revenue, the dramatic fall in prices has unleashed a chain reaction with far-reaching consequences on government budgets, sovereign investment, economic development



incentives, and critically, on subsidy support and social welfare programs. This is increasing the pressure on the National Oil Companies (NOCs) and changing the very nature of the relationship with the State (their key stakeholder).

How is changing the nature of this “contract with the State” impacting the NOC, and what ensuing repercussions may this have on the oil and gas industry?

Secondly, what changes in the contract would the NOC need from the State to set in place an equation that enables a sustainable return to equilibrium for national finances, in what is generally agreed to be the twilight era for the oil economy?

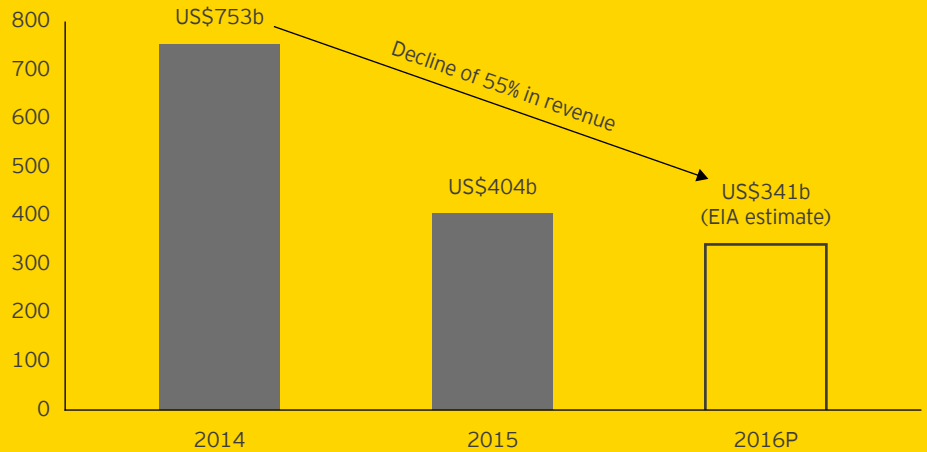
Weak oil prices have led to a decline in current account balances and, for the majority of emerging economies dependent on oil revenues, have caused a significant slowdown in their ability to fund economic activity. Despite putting in place some austerity measures, and an overall decline in spending from previous years' level(s), the fiscal break-even prices for the majority of Middle Eastern and North African countries is still higher than the prevailing oil price, causing deficits for many national budgets. While some countries have used the cushion available from the government reserve surplus accumulated during the boom years, this option becomes ever more challenging when the oil price outlook remains weak for the next few years.

¹ EY Analysis of data from Thomson Reuters Datastream

The OPEC member countries' annual oil export revenues are estimated to decline for the third consecutive year to US\$341 billion (not adjusted for inflation) in 2016. This is 34% lower than the 2015 revenues, and nearly one-fourth of the 2012 levels, and notably the lowest in the past 10 years. This constituency has recorded a joint current account deficit of nearly US\$100 billion in 2015 (the first time in nearly two decades), down from a US\$238 billion surplus in 2014.

Figure 1: Drop in OPEC's revenue

OPEC's oil export revenue trend



Source: US EIA, EY analysis

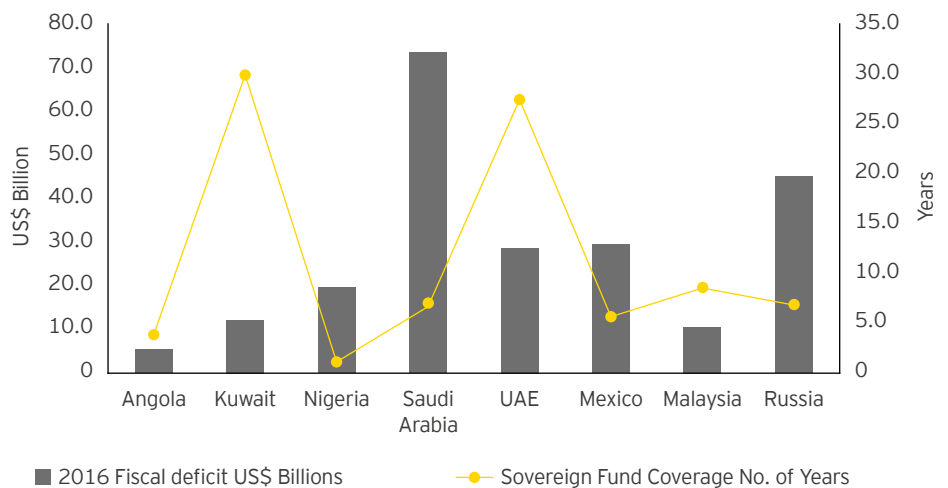
Figure 2 depicts the vulnerability of certain countries' deficit coverage, several of whom are actively exploring options to access loans from the IMF and the World Bank. It also brings to attention the possible fragility of other countries, which will become significantly more exposed the longer it takes for oil markets to regain US\$70+ levels.

As a result, a more expansive strategy is required, bringing into play the national budget itself, major changes to costly subsidy programs, and potentially also the core function of the NOC.

A good example of the extent of change impacting NOCs and hydrocarbon-dependent economies is highlighted in Saudi Arabia's Vision 2030. The country's fiscal reserves are estimated to provide cover for over six years and the ongoing shortfall in revenue has resulted in Saudi Arabia actively, and successfully, tapping into the international bond market to raise debt to cover part of the deficit.

Figure 2: Coverage to fiscal deficit from accumulated surpluses

Fiscal deficit US\$ billion and surplus position in sovereign wealth funds to cover deficit (in years)



Source: EY analysis of various sources

There is an urgent need for NOCs around the world – particularly in heavily dependent hydrocarbon economies – to formulate a long-term plan to fulfill their obligations to the State, over and beyond short-term tactical responses. The manner in which these NOCs are operating, their structures, and their contributions to the State, are simultaneously changing; a transformation so profound that it stands next to the nationalizations of decades past as the most defining moments of their respective histories.

02

Role of the NOC – the “contract with the State”



NOCs are major players in the global oil and gas industry, accounting for 58% of global reserves and 56% of production. They often play a leading role in emerging market economies, and are normally called to be the custodians of a nation’s resource development and energy security. By definition, the hydrocarbon-driven economy prospers by the efficiency with which the country’s oil and gas assets are monetized, and the proceeds of which contribute significant proportions of the State’s revenue. However, the NOCs role rarely stops there, and depending on their home country, they may also be policy makers, regulators, trading commercial entities or a combination of such functions. They fulfill their government mandates, through a diversified group of structures along the entire hydrocarbon value chain, in various manners, including partnerships with foreign oil and gas companies, local partners or in government-to-government (G2G) cooperation agreements.

Moreover, in many hydrocarbon-driven emerging markets, NOCs also act as engines of economic and social development and have explicit or implicit duties such as national infrastructure development and social welfare programs. KazMunayGas (KMG), the NOC of Kazakhstan for instance, has been tasked with integrating the country into the world economy and making sure that the company’s growth and development translates into more general economic growth for the country.

Figure 3: Evolving role of NOCs

Country	NOC	% of revenue from oil and gas to the fiscal budget	Key drivers and changes in NOCs contract with the state
Saudi Arabia	Aramco	80%	<ul style="list-style-type: none"> Maximization of value in company listing Local content program to drive suppliers to have localized manufacturing in kingdom Double natural gas production Increase of downstream value capture
Kuwait	KPC	94%	<ul style="list-style-type: none"> Increase output to 4 mb/d by 2020 Delivery of natural gas for industrial growth and energy mix Increase of downstream value capture Employment and development of Nationals
UAE	ADNOC	63.5%	<ul style="list-style-type: none"> Increase output by 3.5 mb/d Maintain competitive edge by being commercially driven Improve productivity across group businesses Increase of downstream value capture
Nigeria	NNPC	N/A	<ul style="list-style-type: none"> Increase output Reduce import of refined products Increase efficiency and reducing bureaucracy by splitting NNPC to into seven independent units Successful implementation of Nigeria Content Act
Angola	Sonangol	70%	<ul style="list-style-type: none"> Restructuring of Sonangol to drive efficiency Two new entities – the Agency and the Superior Council – will be responsible for regulation and administration.

Source: EY analysis of media reports

There is no standard role or function for NOCs, and their political, social and economic importance as a major revenue generator, employer and innovator has stretched their “contract with the State” over time beyond pure extractive efficiency.

At the lower dependency end of the oil revenue continuum, NOCs will be looking

to optimize around sustainable economic value. But for NOCs whose governments have very high reliance on oil revenue, the situation is very different. These governments face a more existential level of threat, firstly from the continuation of an oil price that yields less than half of its 2014 revenue, and secondly from the tangible growth of energy alternatives

demand that are starting to pull the era of peak oil to within a horizon of 25 years. In this context, it is likely to be necessary to adopt a more expansive policy and to redefine the role and function of the NOC.

Further along the continuum between low and high levels of dependency, it may be necessary to start thinking of NOCs less as a 'National Oil Company', and more in terms of them being a 'National Company'.

In such a role, a National Company's investment strategy needs to be pushing greater economic diversity alongside maintaining or increasing production. For example, some NOCs are actively investing in solar power to generate steam for injection into the oilfields instead of burning valuable natural gas which can be channelled for manufacture of higher value added products. It may also

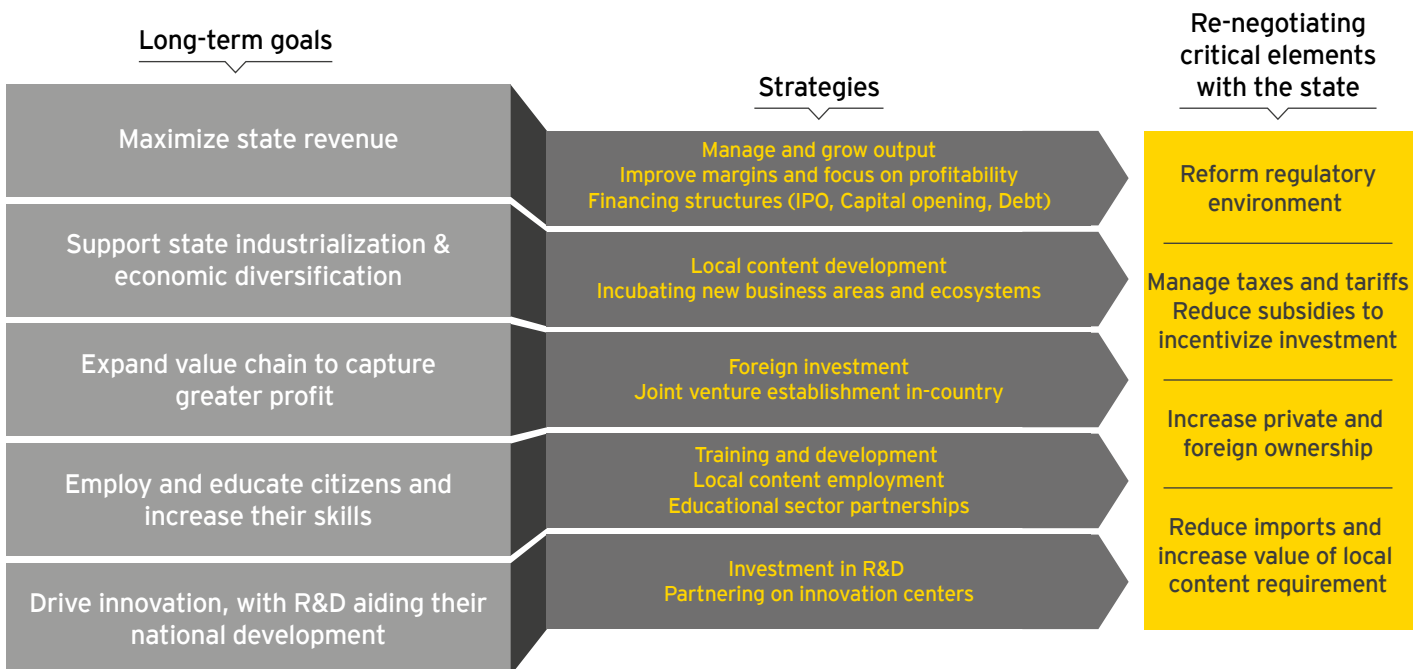
make longer term sense to satisfy more domestic energy demand through gas imports (or even solar) and to export more crude. The additional revenue can then be reinvested in related, but non-oil, commercial ventures that are then spun-off once established in order to grow gross domestic product (GDP).

The aim for a 'National Company' would be to maximize the multiplier effect of its domestic investments and contracting strategy. In this way, it help to fulfil the contract with the state in a different way, by actively growing the wider economy (and resulting tax revenues). At this end of the continuum, debt or equity financing is unlikely to represent a path to a sustainable new budget equilibrium in what may prove to be the twilight era the oil economy.

A framework that takes into account both NOC obligations and critical elements for discussion/re-negotiation as the "new contract with the State" is set out in Figure 4.

The immediate focus is on the expectations faced by the NOC, to sustain and grow in this new era of oil price environment. We identify this (critical) expectation on the NOC as the new "fiscal responsibility" regime, which places a clear emphasis on profitability and quality of earnings.

Figure 4: NOCs new contract with the State



03

NOCs and future fiscal responsibility



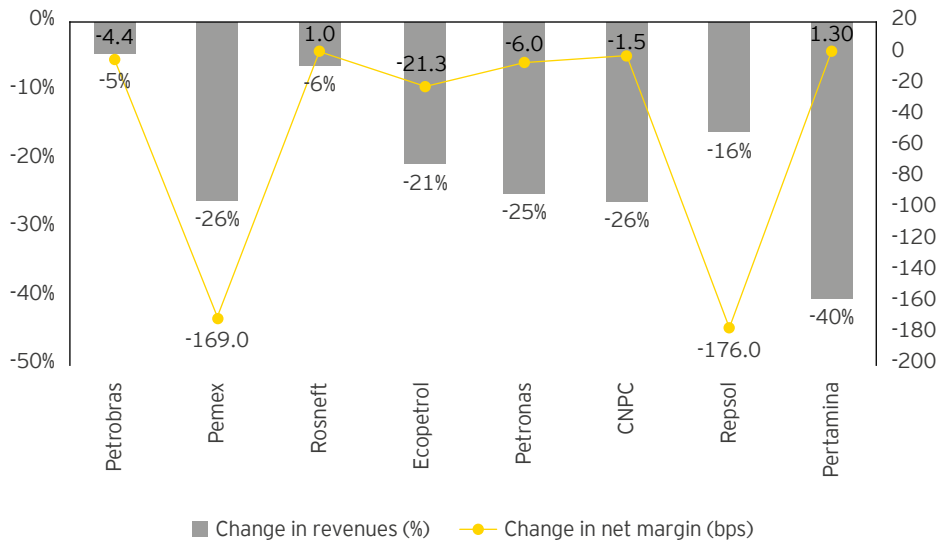
Low oil prices have triggered fiscal tightening measures in many emerging markets. Equally, prolonged low oil prices may further weaken the fiscal balances of these States despite such efforts. Many are responding by taking difficult – yet fiscally responsible – measures such as:

- ▶ Reducing (sometimes eliminating) subsidies on fuel and energy prices
- ▶ Cutting salaries for government employees across all levels
- ▶ Cutting capex programs
- ▶ Maximizing oil and gas production volumes in the short term to partially compensate for lower prices

The sharp decline in global oil prices has shattered direct revenues and tax receipts and created significant budget tensions for oil-dependent emerging economies. The less diversified NOCs have experienced a much bigger impact from the drop in oil price.

Figure 5: Drop in price hits non-diversified NOCs earnings hardest

Change in revenues (%) and net margin (bps): 2015 vs. 2014

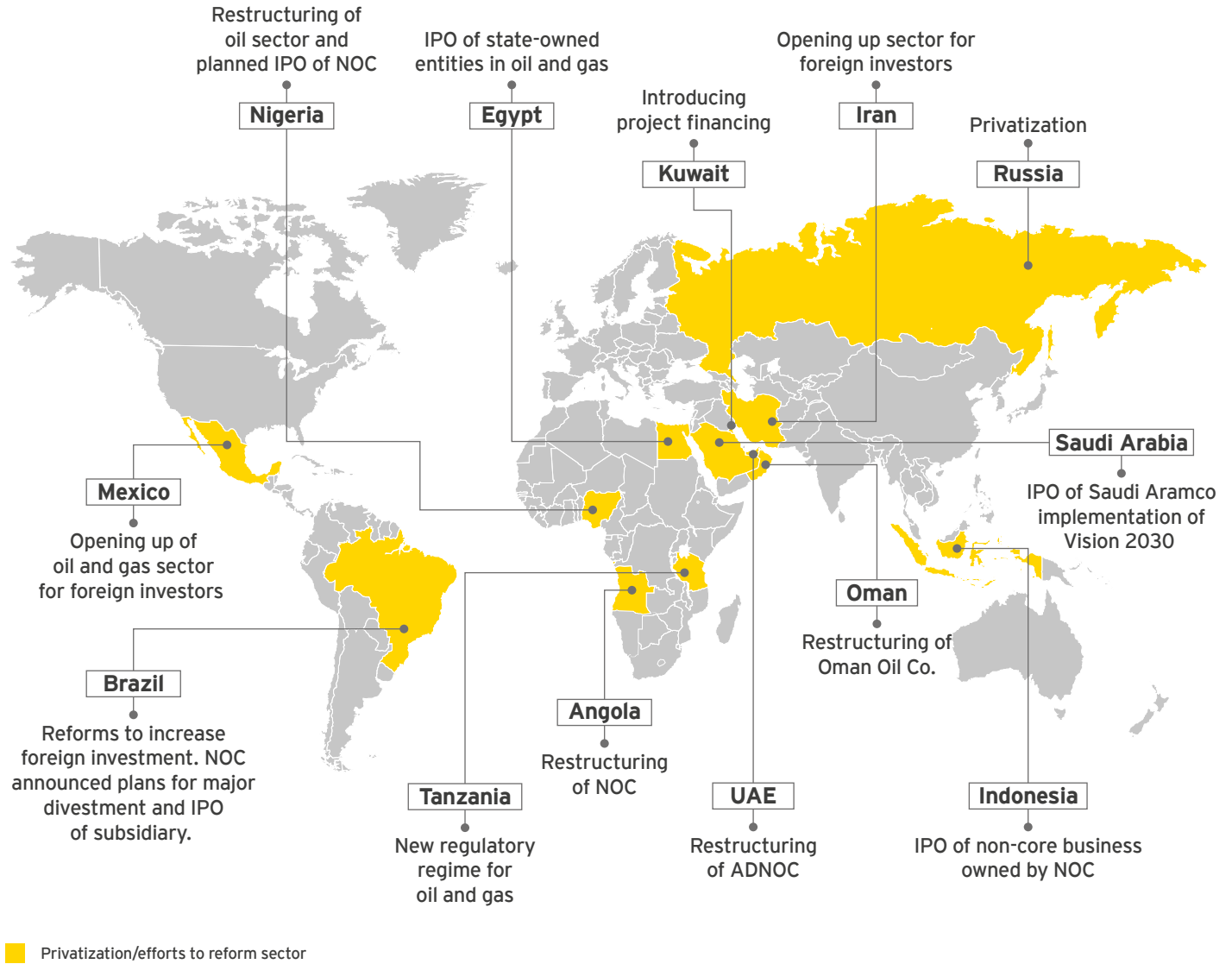


Source: S&P Capital IQ

We are witnessing an unprecedented number of governments considering partial privatization or listing of their NOCs to raise capital, exploring alternative means of funding capital requirements

and project financing. The level of economic diversification, and thus relative contribution of the oil and gas sector to the country's GDP, is pivotal on the urgency of action required.

Figure 6: Initiatives by governments and NOCs to reduce deficit, raise capital or attract new investment



Source: EY analysis of media reports

04

Redefining the NOC strategy: moving from “volume to value”

With revenues per boe at less than half of their 2014 peak, NOCs are quickly becoming aware of the need to shift away from a focus on **volumes** towards the realization of **value**.

NOCs are largely volume- and budget-focused organizations, while the extent of capital employed – and the effectiveness of that capital – have generally been secondary considerations. In this capital-constrained environment, the focus needs to be on extracting the maximum sustainable value from capital assets or, in other words, doing more with less. While moving from volume to value is not a new concept for IOCs, the concept has only been more recently embraced by NOCs.

The NOCs enterprise value can be considered in different ways, but with a constant financial point of view – one that represents the quality of the free cash flow it generates and the return on capital it is able to deliver.

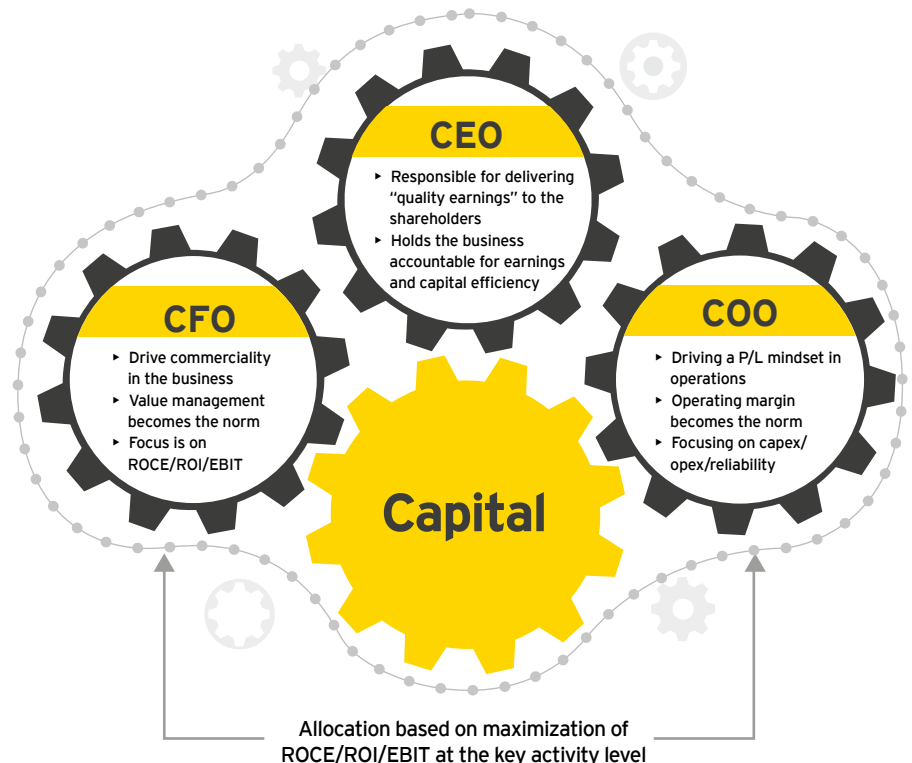


Enterprise value is only one part of the equation. The increase in in-country value an NOC can bring to their respective country and how that value is used and reinvested for the nation's wealth redistribution, job creation, infrastructure

etc. For example, Saudi Aramco is likely to be a major new adopter of this principle as a result of its desire to complete an IPO and maximize the earnings that should be generated from its listing.

Figure 7: NOC transformation: understanding the role of capital

All of these roles will change the NOC primary accountabilities and responsibilities due to the core focus on capital efficiency.



Source: EY

While each NOC will have their own specific issues, the constant thread is the reality of capital constraints, and the urgent need for NOCs to “commercialize” their business. In this context, NOCs will have to develop new operational models that:

- ▶ Focus on building commercial acumen throughout their organization across the entire value chain of operations
- ▶ Ensuring decisions are made which fully maximize and sustain commercial returns from the entire eco-system

The roles of finance, championed by the CFO, as well as operations, championed by the COO (or Asset Leaders), are also undergoing significant change. As depicted in Figure 7, the expectation of the CFO is to drive commerciality in the business. The CFO, and finance at large, need to actively partner with the business to ensure that the allocation of capital is optimized to drive key performance indicators such as ROCE and ROI. There is increased need to embed the impact of core operations to EBIT throughout the business.

Symbiotically, the COO, and the core asset operations, will need to embed a P/L mindset across the asset teams – alongside operational reliability, to complete the operations value equation.

Only by having a fully coordinated effort, i.e., by establishing a culture of capital

excellence and operational excellence and by breaking down traditional silos across the value chain, will the NOCs be able to achieve their goal of maximizing return in the most efficient manner.

To begin addressing this, NOCs – particularly in Middle East and North Africa - are establishing new investment committees, tasked with allocating capital across the portfolio of business activities in a significantly more efficient manner. One of the more impactful outcomes of this approach will be focusing on the CAPEX portfolio by;

- ▶ Seeking to eliminate uneconomic projects
- ▶ Repositioning and re-grouping projects seeking to leverage synergies
- ▶ Minimizing potential overlaps across the portfolio.

With capital budgets falling, tighter choices are required between and within categories, and a strong, consistent basis for value evaluation is required.

Simply stated, for NOCs, the common value denominator will always remain the net government cash flow it is able to generate – however, the quality of earnings will define its real value.

The NOCs who will succeed in maximizing their potential enterprise value, and thus maximize their contribution to the nation, will be those who succeed at building capital excellence and operational excellence into their culture.

05

Setting the path for the NOC transformation journey



To conclude, the case for NOC transformation is clear. The coming years will be defining for the NOCs as they progress to become “commercial NOCs”, fully embracing the need to embark on the capital transformation.

Industry transformations are never simple. For an NOC to be able to maximize the quality of its earnings and contribution to the State, many aspects critical for the successful NOC of the future will need to be understood and addressed, which are included in Figure 8.

NOCs must change the way they relate to their government in order to maintain their critical roles within the global oil and gas market and within their governments. By implementing changes that maximize their margins and increase capital efficiency, NOCs will position themselves for survival and growth through this new era of abundance.

Figure 8: NOC transformation: understanding the role of capital

Revenue streams and diversification

The NOC has multiple revenue streams from a diversified core business portfolio of investments.

Balancing national versus commercial objectives

The evolution of the NOC serves as a key contributor of the country’s GDP while fulfilling both national objectives and the profitability expectations of key stakeholders of the entity.

Internationalization

The NOC creates a significant international presence with investments in major high-growth-potential markets.

Autonomy

The NOC has a well-structured contract with the state and the oil and gas regulator, which enables the entity to allocate capital that will enhance its long-term value and produce quality of earnings.

NOC transformation

Funding

It has a combination of external commercial finance, equity investors and free cash flow from operations.

Vertical integration

The NOC is fully integrated to capture and maximize income in the entire oil and gas value chain.

Enabling technology

The NOC uses cutting-edge technology and digital solutions to improve efficiency and productivity that helps it retain status as one of the low-cost producers.

People, capabilities and skills development

The transformed NOC has well-developed centers of excellence in key locations, and its staff are able to conduct market-leading training programs.

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