

Fueling the world
of tomorrow
IOCs and NOCs at
a turning point



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Executive summary

Over the past several years, record oil prices, coupled with a re-emergence of resource nationalism, have fueled the growth and expansion of several National Oil Companies (NOCs). In many situations, NOCs are no longer motivated to enter into equity-based contracts with International Oil Companies (IOCs) and many NOCs, such as Asian NOCs, have expanded their operations by seeking resources beyond their traditional borders. As a result, IOCs have found it more difficult to replace reserves, and their long-term business plans were called into question.

In late 2008, oil prices dropped precipitously. Oil producers around the world were jolted from their comfort zones. A global economic slowdown reduced demand for energy, and exposed the vulnerabilities of NOCs – demonstrating quite dramatically how their growth and progress can rapidly become conditional and uncertain. With many NOCs facing difficulties, a sense of interdependence between NOCs and IOCs is being rediscovered. The assumption that increased revenues would allow NOCs to disregard IOCs by relying on domestic financing is being challenged.

For both NOCs and IOCs, there is a great sense of urgency surrounding future strategies and in particular the relationship models between the two. Deloitte member firms, hereafter Deloitte, have examined several scenarios in this paper which suggests that, if IOCs and NOCs fail to re-invigorate their relations, the course of events over the next two decades could cause NOCs and IOCs to fall short of their goals leading to dramatic industry restructuring.

In order to prevent these drastic outcomes, IOCs should continue to focus on developing creative strategies to engage NOCs.¹ In these new partnership models, IOCs must focus on strategies that are more open-minded, diplomatic, proactive and risk-tolerant.

NOCs and their states have seen the limitations of resource nationalism and have an opportunity to move toward more inclusive oil policies. NOCs must understand that efficiency gains obtained through cooperation with IOCs can allow the governments of resource-rich countries to maintain reliance on NOCs for ensuring the flow of funds to the national treasuries while at the same time allowing the NOCs to develop and internationalize more effectively. In many parts of the world, a new wave of IOC-NOC cooperation could also sustain the nascent policies of diversification of national economies away from dependency on export of raw materials. In this paper, Deloitte offers specific suggestions as to how the two categories of oil companies can work together to achieve benefits for themselves and the world's energy situation as a whole.

NOCs and IOCs are truly at a turning point in their evolution. Decisions made today will have long-term effects on how the global oil industry will develop in the next decade.

¹ We acknowledge the vast variety of existing IOCs and NOCs, including some that span these two categories. However, the focus here is on large international integrated global oil firms, and on resource-holding – rather than resource-seeking – NOCs

IOC-NOC cooperation matrix

Oil price	Technology	Global politics	Outcome	Description of scenarios
High N	Breakthrough I	→ Collaboration N I	1. Win-Win	(Code name: "Happy Growth") This is a scenario in which prices are high but unsustainably so because of breakthroughs in energy technology. Oil prices are eventually reduced but they do not plummet outright because of continued strong global economic growth fostered by international political and economic cooperation. While resource nationalism is high for the moment, collaborative international environment offsets its destructive potential, and NOCs feel the approaching need to cooperate with IOCs to increase efficiency and achieve evolution goals. IOCs, on the other hand, have the financial resources to fully commercialize technological innovation, increase their production of petroleum and even non-petroleum-based energy.
		→ Confrontation segmentation	2. Lose-Lose	
	No breakthrough N	→ Collaboration N I	3. NOCs Win	Prices are sustainably high. IOCs will have to yield to NOCs because they will run short of alternative strategies. IOCs become service providers to NOCs or are forced to exit the oil sector in the long run. Acquisition of oil field service companies by IOCs may change this picture in favor of IOCs.
		→ Confrontation segmentation	4. Lose-Lose	
Low I	Breakthrough I	→ Collaboration N I	5. Win-Win	Perhaps the most favorable environment for IOCs and NOCs. Prices are moderate, which – coupled with global cooperation and new IOC confidence – stimulate IOC-NOC business ties.
		→ Confrontation segmentation	6. Lose-Lose	
	No breakthrough N	→ Collaboration N I	7. Win-Win	(Code name: "Back to the Future") This is a scenario in which NOCs need IOCs as a source of capital, technology and models of management, and IOCs need NOC-controlled reserves more than in scenarios defined by high oil prices. Organic production and exploration matter here more because technology does not provide enough other energy output to offset the dominance of conventional hydrocarbons. Nothing especially new here – all of the above took place in the past, when low oil prices, bipolar or unipolar global political systems and the lack of new technologies defined the playing field for oil companies.
		→ Confrontation segmentation	8. Lose-Lose	

- High probability scenarios
- Low probability scenarios
- NOC relative advantage vs. IOC
- IOC relative advantage vs. NOC

IOCs at the crossroads

The rise and growing importance of NOCs in the global supply-demand balance is borne out by the numbers. While IOCs have access to a vast pool of petroleum resources, they directly control only about five percent of known conventional crude deposits; NOCs control the rest.² Reserves currently available for private investments are limited, increasingly costly, and technologically challenging to access.

The phenomenal rise of NOCs can be traced back to the 1970s' worldwide nationalization wave. When oil prices collapsed in the 1980s, and IOCs returned to some exporting countries, they discovered that the operating environment in these places had changed dramatically; once little more than façades for state bureaucracy, NOCs had become fully-operational industrial units.

The ensuing, prolonged period of high oil prices – from 2003 to 2008 – expedited the growing significance of NOCs. Constantly reevaluating and adjusting their business strategies, NOCs have been giving IOCs cause for major unease. These concerns include:

Resource nationalism

When asked about the biggest challenge of the past several years, most CEOs of IOCs highlight the increasing difficulty of accessing new resources. High oil prices have revived resource nationalism, and state control over natural resources has been hugely strengthened. Examples include pressure on IOCs to accept new contract terms in existing production sharing contracts (PSCs) and joint ventures (JVs) in Russia, Venezuela, Kazakhstan, Ecuador, Bolivia, Iraq and other resource-rich countries.

Equity participation

Traditionally, IOCs have focused on obtaining equity participation in NOC-controlled projects, in order to book reserves, and fix a certain – usually rather high, by NOC standards – rate of return. But higher oil prices shifted the equation in the direction of the enhanced ability of NOCs to cover below-ground risk. IOCs find their bargaining power weakening in existing equity-based projects with access blocked to many new projects.

Asian companies, especially state-owned petroleum enterprises from China and India, have shown their prowess in international exploration and development bids in recent years.

For example, the proposed shift from a concessionary system to production sharing contracts for the Santos Basin prospects in offshore Brazil, and the bid to use service contracts instead of PSCs in Iraq, illustrate that trend.^{3,4}

Competition

IOCs are realizing it's not just their peers who are their fiercest competitors, but also resource-seeking NOCs and an array of oil field service companies (OFSCs).

Asian companies, especially state-owned petroleum enterprises from China and India, have shown their prowess in international exploration and development bids in recent years. Absent the pressure by public shareholders, Asian NOCs are willing to accept lower rates of return than IOC shareholders. China's CNPC's success in Central Asia and Africa not only showed the company's assertive strategy but was also an example of increased NOC-to-NOC deals. With such strategies and deals having strong political drivers and being backed by state policies, IOCs will continue having difficulty offsetting their impact on industrial dynamics and business environment.

Global OFSCs also present a perplexing situation for IOCs. In the past 15 years, outsourcing by IOCs has contributed to OFSCs' ability to develop exceptional technological skills in exploration, drilling, engineering, and construction. This has reduced the bargaining power of IOCs with regard to technological competency and costs.

² Petroleum Intelligence Weekly Special Supplement Issue Vol. XLVII No. 48 December 1, 2008 p.2

³ Petrobras Outlines Subsalt Plans. *International Oil Daily*, August 14, 2008

⁴ Service Contract Conditions Are Outlined. *Upstream*, October 17, 2008 p.18

Reserve replacement

IOCs are facing a crisis with respect to reserve replacement rates, which have decreased over recent years.

IOCs are spending increasing sums to grow reserves by a very small amount. Reserve replacement between 2003 and 2007 has averaged 107 percent per year, while finding and development costs have increased roughly 26 percent annually.⁵

The five supermajor global integrated oil and gas firms generated more than \$100 billion in profits on nearly \$1.5 trillion revenue in 2007. From 2003 to 2007, their revenues increased by 51 percent; net income increased by 85 percent.⁶ Yet, combined oil output by the five supermajors over this time period declined by more than two percent.⁷

The environment of strong cash flow but stagnant output growth and rising production costs have invited criticism due to concerns of IOC underinvestment in new supply.⁸ Redeploying cash flow into marginal and uncertain prospects – be it a risky investment in an exploration prospect in a politically volatile country or a domestic investment for developing unconventional petroleum resources – was regarded as exposure to value-destroying factors. Among them – higher taxes, political risks, rising costs of operations, and an increasingly tighter labor supply. As a result, many public oil companies were returning large amounts of cash to shareholders rather than reinvesting their discretionary funds into new production. But while stock buybacks had impressed investors and shareholders historically, many equity analysts are now changing their outlook. They are increasingly concerned that the declining oil fields of the largest IOCs will make it difficult to maintain – let alone increase – output of conventional petroleum in coming decades. In fact, there is some evidence that the stock market is shifting its emphasis from capital discipline metrics to production growth in valuing supermajor stock prices. A stronger emphasis is put on growth in reserves and organic production.⁹

These factors – strong competitive pressures, difficulty in replacing reserves and a weak economic environment for successful transition away from the conventional oil business – have brought IOCs to a fork in the road. New ways must be found to improve reserve replacement.

The environment of strong cash flow but stagnant output growth and rising production costs have invited criticism due to concerns of IOC underinvestment in new supply.

5 Equity research publications by Deutsche Bank, ABN-AMRO, Merrill Lynch, J.P. Morgan (J.P. Morgan Global Oil & Gas Daily) and Credit Suisse (Credit Suisse Global Oil Daily)

6 S. Lazzari and R. Pirog. *Oil Industry Financial Performance and the Windfall Profits Tax*. Congressional Research Service, September 2008

7 Ibid

8 A. M. Jaffe and W. S. Wilson. *The International Oil Companies*. Publication of the James A. Baker III Institute for Public Policy, November 2007

9 Christopher E.H. Ross and Lane E. Sloan. *Terra Incognita: A Navigation Aid for Energy Leaders*. PennWell Corp., 2007, pp.189-235

Interdependence for growth: NOCs at a crossroads, too

The relative lack of access to resources coupled with other challenges described above have increased IOC's desire to explore novel ways of working with NOCs, even on suboptimal terms. But it's not all one-sided: relations between NOCs and IOCs continue to be defined by mutual needs.

Remarkably, the re-emergence of resource nationalism since 2003 has not led to a complete expulsion of IOCs from NOC-controlled oil basins. Instead, the main focus of petro-states has been on increasing government take and on developing companies in charge of their resource endowments. NOCs have continued to evolve, in part, by tapping into IOCs' strengths including experience in managing large integrated assets, supply and value chains, human resources, access to unique technology (including technology management and application skills), and enterprise risk analysis.

But the late 2008 collapse in oil prices turned the tables in the global oil industry. When oil prices quickly fell from record highs of almost \$150/bbl to below \$40/bbl, NOC vulnerabilities became more noticeable.

An inherent strength of NOCs, their connection to the state, is also a source of their weakness. NOCs' marriage to state finances, and conflicting strategic priorities due to the presence of the government as its key shareholder, implies a unique set of corporate values. These priorities often stop NOCs from making the most of their competitive potential.

In fact, high oil prices can make some NOCs, on balance, less – not more – efficient. This is because the NOCs do not operate exclusively on the basis of free market principles. In many cases, their priority goals may include wealth redistribution, job creation, general economic development as well as energy security. High oil prices revive dormant economic ambitions in resource-producing countries, with NOCs and national governments developing competing claims over the use of extra cash generated by oil and gas operations.

Feeling the pressure of slower cash flows, some NOCs operating in countries with declining reserves and legacy problems in the upstream sector were forced out of their comfort zones ...

In some countries where NOCs dominate national economies but where national oil income per capita remains low, oil production stagnated or declined despite favorable market conditions. There are several examples of how a mix of resource nationalism, increase in government take, and energy subsidies can lead to underinvestment in exploration, proper reservoir management and refining, and, as a result, depress domestic production. In Mexico, the country's top producing oil field Cantarell has been facing a precipitous decline of production. In Venezuela, domestic political infighting affected the state oil company, and resulted in the long-term loss of production capacity. In Russia, oil production growth slowed down – largely due to the end of so-called "brown-field renaissance" and lack of investment in new reserves located in the Arctic, Eastern Siberia and offshore zones. In Iran, high demand for refined oil products was artificially sustained due to generous subsidies by the government; all the while, the country has experienced difficulty refining or exporting some of its heavy-and-sour crudes. In Nigeria, social and political turmoil triggered armed violence in key oil-producing coastal areas, and there have been several periods when a large portion of oil production has been suspended.

Feeling the pressure of slower cash flows, some NOCs operating in countries with declining reserves and legacy problems in the upstream sector were forced out of their comfort zones in which strong oil prices had been covering for corporate and industry inefficiencies and delaying reform. This change has accentuated IOC-NOC interdependence, a relationship whose importance had been obscured by high oil prices.

World energy supply hanging in the balance

The prospect of non-cooperation between IOCs and NOCs poses a grave threat to the world's future oil supply. The International Energy Agency (IEA) has recently outlined how chronic underinvestment could seriously compromise the future flow of oil, and has called for a "global energy revolution." In its World Energy Outlook 2008, the IEA described the world's energy system as being "at a crossroad," arguing that oil companies will struggle to pump enough new oil to offset the declining production from the world's older reserves. The industry, according to the report, will have to invest \$350 billion each year until 2030 to counter declining supplies and find sufficient new oil reserves to satisfy the growing demands of large emerging markets such as China and India. In 2007, spending on exploration and production was \$329 billion.¹⁰

The world's future energy supply is destined to hinge increasingly on the strategies and policies of NOCs. As a result, ways of doing business that are specific to NOCs will have a substantial long-term impact on global resource development.

The crux of the problem stems from the fact that IOCs and NOCs have somewhat different business goals for the production of oil and gas. For IOCs, quick monetization of resources is important. Contrast this with the NOC-dominated world, where oil price – regardless of how high it gets – may not act as a strong enough incentive to boost supply. Indeed, the counterintuitive reality is that there are two ways the majority of NOCs would respond to an increasing call on their oil in a high-price environment: one group of NOCs may want to produce at capacity, but cannot do so; the other group of NOCs has reserves and the ability to bring new production on line, but may be unwilling to produce to capacity.

This first group of NOCs that want to produce, but lack the ability, belongs to the "petro-states" that have a deeply entrenched – often institutionalized – sense of resource nationalism, historically high government take, and subsidized oil and/or gas consumption. As existing deposits get exhausted, these NOCs are unable to invest enough in new reserves, or to maintain producing reserves efficiently.

They may also be averse to inviting more technologically advanced foreign companies to assist.

The latter group of NOCs has a different set of criteria driving their decision to produce under capacity. Some might do so to prolong the life of the country's petroleum resources, thus ensuring cash flow to state coffers for a longer time. Others may decide that they have enough cash in hand already and are better off leaving some oil in the ground for a rainy day. Thus high prices might do little or nothing to boost supply.

The low price environment brings its own output-related problems. OPEC constraints put a cap on production, and reduced cash flows put exploration and development programs on hold and reduce the efficiency of reservoir management.

NOCs and their national governments do recognize this problem. They understand that high oil prices sooner or later will lead to lower demand and a low price environment. Market conditions in late 2008 demonstrated just that. However, this realization alone will not necessarily translate into effective long-term solutions, and many petro-states may underestimate the power of their own bias for slower output and inadequate investment in creating new production capacity.

In the past, the risk of insufficient supply was often managed by diplomats rather than economists or engineers. President Bush's negotiations with Saudi Arabia throughout 2008 are one example. Optimists hope that the present system of coordination of energy supply strategies between key oil consuming nations and large oil and gas producers will continue for a long time or improve. But if one assumes that the world of the future may become more fragmented and difficult – one where diplomats have less say – this coordination may prove less effective.

¹⁰ Jad Mouawad. Low prices cripple oil-exploration push: postponed plans threaten future energy supplies. *The New York Times*, December 16, 2008

IOC-NOC: Scenarios for the future

The momentous economic and political changes of 2008 pose a new set of questions for IOCs and NOCs. How will the downturn and credit crisis affect badly-needed investment in energy infrastructure and technology? Will sustainably high oil prices stage a comeback as most analysts predict? Will the liquidity crisis deepen and have a long-term impact on the economy – and consequently on global demand for oil, keeping oil prices down? Will the developing nations that have been expected to drive energy demand in coming years rebound from their current problems, or experience difficulty in regaining their momentum?

The oil and gas industry is accustomed to price fluctuations and is rife with change and multiple time horizons, from almost instantaneous investment decisions to those with 10- or 20-year implications. Decisions made today will have an impact on how the world and energy markets evolve over the next two decades. Global oil leaders and decision-makers need to think critically about the underlying political, economic, and technological forces that will shape the future.

Amid today's scenario of turmoil and risk, uncertainty abounds, but so too does opportunity.

Scenarios offer a setting to test competing assumptions about how markets, economies, and political systems work and change, while recognizing that a great number of factors are obscure and cannot be foreseen with precision. The ultimate goal of scenario analysis is to help decision-makers assess the robustness of their strategies and investment portfolios in light of the range of possible futures that could emerge.

Accordingly, Deloitte has developed a set of scenarios depicting alternative business environments that could emerge between now and 2030. These provide a framework for evaluating strategic options for IOCs and NOCs.

Not all insights, of course, will apply to all companies. Each organization faces a distinct set of challenges and opportunities based on its competitive position in the energy value chain: its current portfolio of assets; ownership structure; and managerial, financial, and technical strengths and weaknesses. However, by focusing on links between global political and economic factors, and by reducing the complexity of the real-world market dynamics, scenarios can shed light on the risks that most organizations face, and can encourage decision-makers to confront them head on.

Decisions made today will have an impact on how the world and energy markets evolve over the next two decades.

On what variables should the scenarios focus? Strategic interactions between IOCs and NOCs are determined by a web of interrelated political and economic drivers. The number of such drivers is potentially very large, and relations among them are complex. But, clearly, some drivers stand out as more important than others.

For the purpose of this paper, Deloitte has selected three crucial, basic forces that drive the global oil sector: price of oil, technology, and global politics.

Price of oil

Higher oil prices usually imply that NOCs will not look for external financing from IOCs. In contrast, lower oil prices generally increase NOCs' need to seek financial, technological, and managerial support from IOCs.¹¹ IOCs suffer from low oil prices as well, but it is generally accepted that IOCs cope better with temporary low oil price environments than NOCs. In times of reduced oil revenues, the government in many cases prefers to balance the state budget first – by taking more from NOCs, and sometimes leaving the state oil firm with inadequate or barely sufficient funding for the effective continuation of its planned growth and development programs.

¹¹ We recognize the limitations of this thesis. For example, lower oil prices in 2008, which were partly the result of demand erosion, called into question the need to increase supply in a number of OPEC member states in the Middle East. As a result, some IOCs that have been helping local NOCs increase supply, felt the squeeze

In the scenarios, a “low” oil price reflects an average range below \$50 per barrel of WTI in present-day dollars, while a “high” oil price is everything above \$50. Below \$50, most key oil and gas producers on average will have difficulty covering their national budgets, and some of them will need a much higher price to sustain long-overdue investment in basic infrastructure.¹²

Technology

Advances in energy technologies can reduce IOCs’ need to seek extra reserves of conventional oil from NOCs and can enhance their bargaining power. Such breakthroughs could include drawing from deepwater fields and the production of nontraditional hydrocarbon-based fuels from oil sands and oil tars, as well as fuels produced from natural gas and coal via the Fischer-Tropsch process. Also, new methods of enhanced oil recovery could extend the lives of depleting fields, thus reducing IOCs’ need to look for reserves in NOC-controlled areas.

Alternative energy, including renewables and biofuels, may play a future role in strengthening IOCs as well. However, expectations must be realistic. It is not likely that renewables will become more economical than hydrocarbon-based fuels within a two-decade time span, and the need to invest in oil exploration and production opportunities will remain strong. And although the technology factor can mitigate IOC risks associated with insufficient and depleting reserves and can somewhat improve IOC bargaining power in negotiations with NOCs, it cannot completely replace the need to add new reserves of conventional oil.

In addition, technological advances, coupled with the political will to diversify away from fossil fuels, can dramatically increase energy efficiency in Organization for Economic Co-operation and Development (OECD) nations and offer entire industries a chance to use alternatives to petroleum liquids. IOCs, which pioneered many related research and development initiatives, may play a key role in this process.

12 Nick Butler. “The low oil price calls for a fresh set of rules.” *Financial Times*, December 15, 2008

13 See: *Global Trends 2025: A Transformed World*. US National Intelligence Council, 2008

Global politics

Resource nationalism, which has hindered IOC access to new reserves, and led to underinvestment in key NOC-controlled areas around the world, was in part the result of the weakening of political dialogue between the West and a number of key hydrocarbon-producing countries. This was the case in some Latin American states, such as Venezuela, where a perceived failure of the so-called “Washington Consensus” led to the empowerment of political radicals under the leadership of Hugo Chavez. To an extent, this sentiment was mirrored in the disillusionment of conservative power groups with President Boris Yeltsin’s laissez-faire capitalism in Russia. The lack of this dialogue also prevented some NOCs from investing in energy infrastructure in the US and Europe, which further weakened trust between NOCs and Western governments, and indirectly affected IOCs.

Since 2001, geopolitical tensions have heightened concerns over security – not only in terms of supply, but also energy infrastructure and transportation – and have helped to spur prices to new highs. At least before the global economic crisis hit emerging markets, there was a growing perception that a multipolar global political system with several independent centers of world power was materializing and would amplify the impact of political events on energy markets.¹³

In the scenarios, Deloitte suggests that political cooperation and global regulatory compliance are conducive to the formation of IOC-NOC partnerships. Alternatively, global political and economic segmentation, ideological competition, and the proliferation of armed conflicts will be a major obstacle to new IOC-NOC deals. In such cases, IOCs’ access to new reserves will be met with political resistance in resource-rich states.

NOC expansion along the value chain may encounter obstacles in OECD countries due to concerns regarding energy security.

These three variables – price of oil, technology, and global politics – can produce multiple scenarios. The strategic implications of the business conditions within the scenarios in turn imply different outcomes for NOCs and IOCs e.g. win-win, lose-lose, win-lose, or lose-win.

Deloitte defines a win as the attainment of key corporate goals; correspondingly, a loss is a failure to realize such goals. For NOCs, a win is a continued evolution of an NOC. This includes: increased efficiency of operations, expansion along the value chain, and sustained financial support from and of the state. There is an additional omnipresent, if at times latent, goal of NOCs: to be self-sufficient in all oil operations, with the related desire to become a national oil monopoly. For IOCs, a key win is to achieve sustainable access to new reserves, and increase production rates in an economically viable way. That goal may be complemented by a search for ways to compensate for the insufficient ability to book new reserves by technological breakthroughs. All scenarios herein consider the important role of political factors in the future of the global oil sector.

The scenarios are not set in stone but are merely a depiction of plausible future business environments. By consciously targeting disadvantages described in the scenarios, it is possible to offset them using innovation and better market intelligence, and achieve a win.

For IOCs, a key win is to achieve sustainable access to new reserves, and increase production rates in an economically viable way.

Scenarios: Likely and less likely

The combination of these three drivers produces eight theoretically possible scenarios. Four of them have more credibility than the others because they imply a more direct correlation between oil prices and technology breakthroughs: 1, 2, 7, and 8. They are labeled “Happy Growth;” “Mutual Indifference;” “Back to the Future;” and “Empty Hands.” See IOC-NOC cooperation matrix on page two.

High oil prices create an incentive for oil and gas companies and other investors to invest in the research and development of unconventional petroleum, enhanced oil recovery techniques, and alternative energy. These efforts have traditionally been fiscally supported by governments in OECD nations which, during the periods of high energy prices, awaken to the need to increase the security of their energy supply. The opposite is true as well: with low prices, alternatives to conventional oil may become relatively expensive and, as a result, efforts to develop new energy technologies and enhance energy conservation are often abandoned.

... the future of Western-style democracy is no longer assured, and that the state's role in the economy is bound to gain more appeal throughout the world.

In assessing the likelihood of the scenarios further, Deloitte would like to point out that one trend in today's global political system is toward a multipolar world order that has historically been portrayed as more risky and unstable than unipolar (hegemonic) or bipolar systems. The U.S. National Intelligence Council's (NIC) report released in November 2008 and titled “Global Trends 2025: A Transformed World” suggests that the world is entering an unpredictable period due to this shift toward multipolarity. NIC has warned that the future of Western-style democracy is no longer assured, and that the state's role in the economy is bound to gain more appeal throughout the world.

The report predicts that over the next two decades, the combined effect of the rise of BRIC countries (Brazil, Russia, India, and China), proliferation of influential non-state actors, and the weakening of multilateral organizations (e.g. United Nations) will translate into less room for the United States – or any other single country – to call the shots in world politics. In addition, terrorism and concerns over the proliferation of nuclear and other weapons are further contributing to a global environment of increasing tensions and uncertainty.

Globalization is often mentioned as a possible casualty of recent negative trends in global politics and trade. Despite globalization's progress over the past few decades, its retreat or failure has become imaginable. While delivering unprecedented growth and prosperity worldwide, globalization has also brought in its wake growing societal and economic chasms – in some cases open trade and market-based reforms are benefiting a relatively small minority at the expense of the rest. Some observers have been pointing to a growing sense, on the part of nations, of losing control of the wheel, with more direct foreign participation in domestic economies, whether through immigration of low-cost labor, outsourcing of services offshore, or cross-border corporate takeovers. Some industry commentators grumble that the worldwide spread of the liquidity crisis in 2008 was at least an indirect result of the internationalization of finance.

Importantly, two out of the four above-mentioned scenarios – “Mutual Indifference” and “Empty Hands”, the ones driven by global confrontation/segmentation – offer a lose-lose outcome for both IOCs and NOCs. If one holds that the shift to multipolarity in global affairs is more likely than other possible trends, then, accordingly, these two scenarios would look more likely than the rest. But the outlook is not all bleak. We suggest that there is an embryonic potential for cooperation between IOCs and NOCs, which can transform the final outcome to one of win-win.

Mutual Indifference. This scenario is determined by a combination of high oil prices, success in commercializing new energy technology, and confrontational global politics. The investment environment here is heavily influenced by resource nationalism in oil-producing states, while there's grave concern about energy security in large energy consuming nations. Sound familiar? That's because this scenario, in fact, resembles the global oil sector of the past several years – minus the new technology component.

How would *Mutual Indifference* affect IOCs and NOCs? This scenario would give rise to a reciprocal indifference between NOCs and IOCs. Awash in cash, resource-holding NOCs would not be loathe to loosening, or even suspending, ties with IOCs. IOCs, for their part, would be embracing technological innovation, and likely reaping substantial profits on these non-traditional ventures. They could hope that this would allow them to reduce their need for NOC-controlled reserves. But with the combined effect of high oil prices, widening global fissures, technology breakthroughs and measures to enhance energy efficiency, demand for conventional oil would fall. This becomes a classic case of oversupply and waning demand – calling into question the very sustainability of *Mutual Indifference*. In all likelihood, oil prices would be reduced, disciplining NOCs and sinking profits for both NOCs and IOCs.

Empty Hands. This scenario describes a long period of sustainably low oil prices, no breakthroughs in technology, and a similarly conflict-prone global political arena that gives rise to another lose-lose outcome. This scenario can only reflect a long-term global economic depression followed by the lasting retreat of globalization and multilateralism.

The *Empty Hands* scenario is as sustainable as the global economic depression.

How would *Empty Hands* affect IOCs and NOCs? With resource nationalism not a priority, low oil prices motivate some NOCs, especially those with mature, depleting reserves, to seek external help. Other NOCs, however – those representing OPEC – are not sufficiently motivated to involve IOCs in increasing production. IOCs are not a happy lot either; they're cash-strapped, with dwindling investments in technology, and unable to book reserves. Even among those NOCs and IOCs that eventually do decide to come together, global tensions and mutual distrust prevent them from fully realizing the potential of cooperation. The *Empty Hands* scenario is as sustainable as the global economic depression. It all depends on for how long the return of economic growth – and higher oil prices – can be kept hostage to a global political disorder.

But while *Empty Hands*' sustainability is questionable in the long run, the oil corporations do not need to wait. *Empty Hands* has a potential to be transformed into a win-win, but only if both sides make an extra effort toward cooperation. IOCs, if they play their cards right, could squeeze their way in and get equity access to NOC reserves. And NOCs, for their part, could potentially use IOCs' tech savvy to their advantage.

The other two scenarios – with global cooperation instead of global conflict – have win-win outcomes. That means both IOCs and NOCs achieve their corporate goals. They are described below:

Happy Growth describes a scenario in which prices are high but unsustainably so because of breakthroughs in energy technology. Oil prices are eventually reduced but they do not plummet outright because of continued strong global economic growth fostered by international political and economic cooperation.

While resource nationalism is high for the moment, collaborative international environment offsets its destructive potential, and NOCs feel the approaching need to cooperate with IOCs to increase efficiency and achieve evolution goals. IOCs, on the other hand, have the financial resources to fully commercialize technological innovation, increase their production of petroleum and even non-petroleum-based energy. In this scenario, NOCs successfully internationalize their upstream and downstream operations with the help of IOCs, and transform themselves into fully commercial entities with progressively reduced operational and strategic influence by the state.

Back to the Future is a scenario in which NOCs need IOCs as a source of capital, technology and models of management, and IOCs need NOC-controlled reserves more than in scenarios defined by high oil prices. Organic production and exploration matter here more because technology does not provide enough other energy output to offset the dominance of conventional hydrocarbons. Nothing especially new here – all of the above took place in the past, when low oil prices, bipolar or unipolar global political systems and the lack of new technologies defined the playing field for oil companies.

The cooperative atmosphere in world politics in this scenario promotes IOC-NOC collaboration. IOCs have a real chance to gain access to new reserves. Although NOCs form new joint ventures with IOCs, their international expansion in the upstream and downstream sectors proceeds slowly. While the operational autonomy of NOCs from the state gradually but steadily increases, their strategic priorities are expected to remain largely under state control.

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Navigating away from the lose-lose outcomes

The scenario-building exercise is a useful tool for raising awareness of risks to the global oil supply and a useful guide to the potential future of IOCs and resource-holding NOCs. It also shows the importance of political issues in the overall mix of factors that define global oil business. Should the two groups of companies fail to re-invigorate their relations soon, the natural flow of events will likely carry them further away from achieving their corporate goals. Moreover, an inadequate energy diet may stifle global economic growth, with a resultant increase in the factors favoring global fragmentation and international rivalry. That, in turn, would further undermine a business environment that would support the future success of NOCs and IOCs.

Unfortunately, the credit crisis and global economic downturn have created much uncertainty about what lies ahead for the global energy marketplace. Many assumptions about the dynamics in place, and their implications, have already been undermined. An obvious example is the idea prevalent as recently as mid-2008 that world oil prices above \$100 had become an irreversible new reality.

IOCs now face the task of making strategic decisions despite doubts regarding fundamental issues concerning demand, supply, and competition. The scenarios Deloitte has developed illustrate how divergent the possibilities have become. With respect to NOC relations, finding the right balance is difficult – any given course could prove to be too much or too little.

How to best launch the rapprochement? What would be helpful in the short-term are transactions and affiliations that provide contact and communication, but that falls short of any major binding commitments. If there were more such endeavors both sides would gain visibility into developments throughout the global marketplace and across the industry supply chain, and they would achieve more strategic flexibility.

By working together in this period on a carefully-calibrated basis, IOCs and NOCs would each learn more about their counterparts' changing perspectives. If incoming information and unfolding events indicated that additional cooperation would be advantageous, they could take additional steps in that direction, capitalizing on the enhanced familiarity their mutual undertakings would provide. If new developments signaled that a parting of the ways was called for, this could be achieved with a minimum of disruption given the limited nature of the initiatives.

A framework for interaction

Deloitte has developed some strategies and tentative joint venture models that may be suitable for developing new IOC-NOCs ties, but without establishing overly substantial commitments. Whether and to what extent each of these will be suitable for implementation will vary from one company to the next, but they are worth considering if only as a springboard for more precise thinking that takes particular circumstances into account.

Moreover, an inadequate energy diet may stifle global economic growth, with a resultant increase in the factors favoring global fragmentation and international rivalry.

This section begins with some thoughts about the need for IOCs to increase their sensitivity to NOCs' concerns, and then turn to three specific suggestions: joint ventures for economic diversification and NOC development, asset swaps, and complex service packages. Deloitte also suggests that IOCs consider making technology and talent acquisitions part of their core competencies, not only to strengthen their exploration and production capabilities but also to enhance their ability to meet NOCs' needs.

Some of these ideas are suggestions on how to improve existing joint ventures with NOCs, and some include radical departures from conventional thinking.

These recommendations are not "silver bullets" that promise to transform the complex and difficult relationship between IOCs and NOCs into a sustainably collaborative setting. Structural problems in this relationship will remain, but measures that can mitigate tensions and misunderstandings may help make this relationship more predictable and productive.

Managing the cultural, social and historical context of IOC-NOC partnerships

In formulating new partnership models with NOCs, IOCs need to be more open-minded, diplomatic and proactive. As noted above, IOCs and NOCs have different drivers for the development and monetization of resources in a host country, and often that is a cause of friction. NOCs perceive that IOCs are insensitive to the long-term economic and social progress of their countries, but rather want to produce the reserves quickly to satisfy the short-term expectations of the stock market. At the same time, NOCs and an array of political actors in host states may be wary of the loss of corporate and even political and cultural identity if they forge ties to IOCs that are perceived as too strong and too long-term. IOCs need to find ways to manage such perceptions.

In this regard, negotiations and relations management have become key to success. Organizational learning at IOCs will benefit from intensified programs that muster respect for the goals, expertise, culture and feelings of business partners in this new environment, which is increasingly competitive, multicultural, and unstable.

Joint ventures for economic diversification and NOC development

In all scenarios defined by a high oil price environment, resource nationalism is a major obstacle to IOC-NOC cooperation. However, resource nationalism can be defanged if IOCs consider taking on more risk and consider ways to improve the complex national development policies of resource-holding states.

While the fundamental goal of IOCs remains accessing NOC reserves on strictly commercial criteria, the primary need of resource-holding NOCs and their governments is to realize the full value of their hydrocarbon exports while achieving sustainable development through economic diversification. This includes the ability to reinvest their surplus funds abroad so as to reduce their excessive historical dependence on the export of raw materials.

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IOCs should consider forming new partnerships to address NOC host countries' long-term development goals, such as through the development of natural gas, LNG, refining and petrochemicals businesses. Such partnerships have been applied in the petrochemical and refining sectors, and could be developed for upstream and midstream ventures. One example for such partnerships is a recently signed exploration and production sharing agreement between Occidental Petroleum and Mubadala of Abu Dhabi with the Ministry of Oil and Gas of Oman.¹⁴

A variation of this model involves forming joint IOC-NOC ventures in third countries. As a number of NOCs expand the scope of their activities through the value chain and internationally, they seek to attract foreign investment in new businesses and to acquire assets abroad to receive better access to markets. There are, in this respect, opportunities for international strategic alliances between IOCs and NOCs, with each party leveraging its assets to access the missing link in its supply chain. In terms of international downstream ventures, NOCs like KPC, Sonatrach and Saudi Aramco have already integrated their activities significantly and are present in refining. But they can continue learning from the IOCs' management practices and marketing skills.

Asset swaps

A different way to deal with the high oil price world illustrated by *Mutual Indifference* – where NOCs' confidence runs high – is to consider asset swaps. Such deals include exchanging assets belonging to two or more companies. An example would be the previously proposed transaction between Gazprom and Statoil in regard to the Snøhvit deposit of natural gas. Under this arrangement, Gazprom would acquire a piece of the Snøhvit liquefied natural gas project, receiving a greater exposure to LNG technology and markets, while Statoil would receive a piece of the Shtokman giant offshore gas project controlled by Gazprom.

This model taken to extremes may imply the outright merger of a large resource-holding NOC and a supermajor. The IOC would receive access to all reserves of the NOC while the NOC becomes the owner of technology, value chain, access to markets and managerial expertise of the IOC. At present, such deals are unlikely, but they would be more relevant in a business environment resembling our *Mutual Indifference* scenario.

Comprehensive service packages

In the *Empty Hands* scenario, which assumes low oil prices, NOCs might still be reluctant to consider the equity-based entry of IOCs. IOCs could increase their chances of cooperating with NOCs by offering complex management packages which would combine upstream services, technology management, access to capital markets, financial management, and personnel training. By packaging these services as one long-term offering, IOCs – which know how to operate efficiently under the conditions of low oil prices – would have a chance to differentiate themselves from oil field service companies and other competitors (e.g. banks and consultancies).

Because many NOCs still have insufficient experience with the management of large projects, where effective cost control and understanding of new geological challenges is crucial, they have a great deal to learn from IOCs. Managing the declining reservoirs in the Middle East and elsewhere can become a major source of extra business for IOCs under low oil prices. IOCs will be able to differentiate themselves from OFSCs if reservoir management is offered with the provision of other services, and if IOCs become ready to accept lower returns.

One new way of adding value to an IOC service package is to suggest joint investment in research and development functions of NOCs.

14 Oxy Lead Player in Oman Quartet. *Upstream*, November 28, 2008 p.40

Conclusion

Dramatically lower oil prices and the global economic upheaval that spawned them wrought havoc in the oil industry in late 2008. Revenues of oil-producing countries came under pressure, causing a widespread hold on investments in new exploration and development programs. Yet, despite the discomfort and uncertainty, the crisis also affords an opportunity to step back and reassess past strategies. Although insufficient IOC-NOC cooperation was not the major factor in the emergence of the lower oil price environment of late 2008, continued weakening of IOC-NOC ties will likely create big problems in the global oil sector in the future.

NOCs and IOCs offer complementary skills and assets. By using new models of partnership for accessing reserves and pulling together experienced people, proprietary technology, and operational excellence, IOCs and NOCs may well be able to work collaboratively to deliver shared success.

Deloitte Touche Tohmatsu would like to thank Gary Adams, Deloitte LLP Oil & Gas Leader, David Traylor, DTT National Oil Company Market Leader and Vahan Kotanjyan, Deloitte Services LP, for their contributions to this report.

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