In praise of perpetuity

National oil companies manifesto

September, 2017

Arthur D Little

Content

Authors:

Alexandre Lavelle
Partner Energy & Utilities, Dubai
lavelle.alexandre@adlittle.com

Executive summary

Perpetuity is every national oil company's mission. Their articles of incorporation proclaim that they must toil for future generations. While international operators can wander from one country to the next according to the circumstances and various regulatory frameworks of producing countries, national oil companies cannot be so versatile. Neither can they pick and choose geologies; they remain attached to the hydrocarbon heritage exploited on behalf of their people. This praise of perpetuity is a tribute from ARTHUR D. LITTLE (ADL) to national oil companies, which strive to forge a path in a blurry world towards their historical destiny.

Gaze at the beige shades of dunes peppered by countless wells from your airplane window as you land at Hassi Messaoud airport in Algeria. Make out the drilling barges sprinkled across flooded forests as you fly over West Siberia in a relief helicopter. Follow pipelines and manifolds around the street corners of Kuwait's residential neighborhoods. You will comprehend the petroleum industry's promethean work of transformation, shaping on its way to its processing facilities, the land and maritime vistas of our humanity, as we enter a new Anthropocene.

States, multinational corporations and non-governmental organizations aggregate in financial, logistical and information networks that send men to extract hydrocarbons in the Arctic, the Gulf and the Appalachians. In this game of wars and alliances that blends politicians and industrialists, national oil companies stand out. They carry out, as either operators or regulators, the production of domestic hydrocarbons on behalf of their nations and for the sake of future generations. Many arose out of nationalization movements prior to the first oil shock of 1973. Today, they represent 75 percent of global production, and they control about 90 percent of global reserves. They sustain national industrial agendas and maintain, thanks to the diversity of their activities, the largest employment areas in their economies[1].

1 See Silvana TORDO with Brandon S. TRACY & Noora ARFAA, National Oil Companies & Value Creation, World Bank Working Paper NO. 218

1. Heroic figures of the oil & gas industry

After independence, national oil companies were the petroleum industry's heroic figures. Back then, several industry leaders, some of which still guide their companies today, were young engineers put in charge of production assets overnight – assets that were, until that point, operated by foreign companies. Nationalization, a political decision which was, at times, sudden and without negotiation, made these technicians the men accountable for ensuring the prosperity of their countries. Today, portraits of them in hieratic poses adorn the boardrooms of Sonatrach, Pemex, KOC and ONGC. Their mission was colossal: increasing production levels, executing governmental instructions, recruiting and molding a new generation of technicians, paving roads, and erecting hospitals and airports. The intrusion of politics in the early days of national oil companies' operations galvanized their leaders, but also exposed them to often-contradictory directions from governmental authorities. They faced an evolving equation of reconciling operating conditions with political instructions. Once nationalization movements were complete, the mandate of every national oil company's CEO became –and remains today – to untie this double bind.

The celebrations of the 24th of February 1971 at Sonatrach, or the multiplication of shrines such as Burgan's dream tree for KOC, constitute institutional monuments to the epic of national oil companies. Also enduring, in the interstices of their collective memory, is the experience of those teams who, moved by a nationalistic fervor, organized themselves to seize the oil business from the English, French and Americans. Service companies assisted with managing operations and facilitating the transfer of the knowledge necessary for sustaining production.

Nevertheless, national oil companies also had to turn to management consulting firms – which were emerging during the same period, but under different circumstances – in order to restructure their organizations, which they had inherited from foreign operators, and to take hold of their installations. The expansion of management consulting firms and the creation of national oil companies coincided, without there having necessarily been a correlation. Until the 2000s, ADL'S posters explaining the hydrocarbon industrial chain of Algeria had been hanging in the hallways of Sonatrach's old headquarters. At KPC, black-and-white pictures of ARTHUR D. LITTLE consultants side by side with Kuwaiti engineers can be found, capturing the drawing of plans (in India ink, much before PowerPoint!) for a future holding federating the totality of the oil & gas sector in Kuwait. It was a time when consultants, wearing wide-collar shirts without ties and hanging cigarettes on their lips, helped Angola create Sonangol out of nationalized assets from Texaco, Fina, Shell and Mobil.

2. Once upon a time, Arthur D. Little chose to support national oil companies...

An ARTHUR D. LITTLE moment occurred in the history of national oil companies. It was contemporaneous with the decline of US production. Resource depletion in the United States, due to the aging reservoirs in Oklahoma, Florida and Texas, resulted in a power shift that favored national oil companies that were emancipating themselves within OPEC. In order to invert the dependency relationship with the West, the leading figures of the oil & gas nationalism chose to suddenly increase the price of an oil barrel. Ideologies clashed, but extraction technologies, budget-planning processes, IT and organizational know-how continued to be exchanged nevertheless...

The consultants who engaged in nationalizing the petroleum industry in Algiers, Luanda and Kuwait City were optimistic. They brought a managerial approach to their customers' technical problems. ARTHUR D. LITTLE created a model for organization of national oil companies based on four objectives: (i) define a regulatory framework protecting sub-surface development and production; (ii) ensure industrial coherence of nationalized assets through complete control of the hydrocarbon chain, from the reservoir to distribution; (iii) increase production and life of reservoirs; and (iv) develop the competencies necessary for proper operations by establishing a national hydrocarbon school. ARTHUR D. LITTLE contributed to the creation of major national oil companies based on practical knowledge of sub-surface operating conditions and installations, according to a bespoke conception of management consulting – drawing the organizations in wood crayon, not prefilled templates or generic processes. Inspired by their clients' cause, the consultants preferred a more Socratic approach conscious of the ideological stakes of the time, instead of transactional matrices structured in a conventional way.

Mega-mergers reconstituted the giants that had dominated the oil & gas industry at the beginning of the 20th century: Standard Oil is now Exxon; the Anglo-Persian Oil Company, BP; Royal Dutch Shell, evidently, Shell. The United States became an exporter again, thanks to its shale oil & gas production. Were we actually returning to a situation before 1973's oil shock, when the E&P industry was American? The clear lines of ideological conflict had faded (the time of the great ideological battles is over!), and national oil companies became nostalgic, but unavoidable E&P actors, resisting the vagaries of international affairs and the emergence of alternative hydrocarbon sources beyond their control. They remain the largest producers and manage the largest reserves. However, their leaders seem to be searching for a reinvigorating domination model in a legalistic world – a world in which the West daydreams of phasing out hydrocarbons in a hesitant energy transition.

3. The evolving equation

The evolving equation between operational constraints and political instructions is at the heart of any national oil company's agenda. It influences the decisions taken within the domains of action, such as investments, production, contract management and partnerships with international operators. Political and economic interests intertwine in delicate Gordian knots that must be untied by executive committees that lack the ideological clarity of previous generations. CEOs have been secularized; the managerial and technical analysis of operational and investment performance – e.g., OPEX & CAPEX efficiency – replaced martial declarations for national independence announced from the pulpits of oil companies. Faced with multiple simultaneous constraints, they were reduced to tacticians of the evolving equation. Apart from the priority given to the political management of production levels and renewal of reserves, the competition between countries to attract foreign investment forces their leaders to reformulate their visions in positive terms, originally established in the name of the higher national good.

The scale of some projects (heavy oil or natural gas transport infrastructure, for example) demands partnerships that are sometimes difficult to reconcile with a national agenda. Medium and long-term planning requires not only objectives in line with state budget targets and infrastructure projects envisaged for the country's development, but also action plans, which are often in conflict with the maturity of the reservoirs, the operational requirements, the interests of foreign partners, company procedures and policies, or the contractual relationships with suppliers. The CEO's role thus effectively became walking a tightrope between industrial needs and political obligations weaved by government authorities. CEOs used to take decisions on behalf of the authorities. Today, they manage risks – institutional, financial, industrial, etc. – by making the best of their circumstances, in a world of standards, conventions and contracts generally disseminated from the United States to the wider petroleum industry. Globalization and competition between regulatory frameworks, reservoirs, investments, etc., are a source of complexity, counterbalance and challenges to state monopolies.

The evolving equation is a manner of running a national company caught in conflicting forces between an unmovable state and erratic investors moving from one country to the next, based on regulatory attractiveness. "States have roots, and investors' wings."[2] Some CEOs dedicate themselves to controlling their shareholders' expectations, while others focus on conducting operations. Only a few occupy a tenuous and dangerous space – "a slippery path of ice", as described by one of them – where strategy is turned into action, and vision into implementation.

In this context, in order to escape the inertia of internal constraints, the usual consulting firms generally propose a top-down, project management office process tasked with steering the implementation of transformation initiatives. But, all too often, these are plastic toys that dissolve in the stomachs of national oil companies facing field realities. Upstream is an industry for which men travel across magnificent and hostile landscapes, sleeveless workers drill holes several thousand meters deep, and engineers test installations, laying their hands on pumps vibrating under effluent pressure, like fruit farmers touching their trees to feel the coming crop. In oil & gas, outdoor action counts.

2 Ulrich BECK, Power in the Global Age: A New Global Political Economy, 2003

4. Arthur D. Little 's counter model

ARTHUR D. LITTLE aspired to be different. For managers of the evolving equation, it recommended reclaiming the production asset infrastructure and industrial-practice skills of long-lasting national operators. Instead of a top-down, mechanical transformation process, ADL drilled knowledge wells into the many organization layers that irrigated the practice communities with rich, alluvial know-how, which had previously been buried in the memories of engineers and field operators.

As an example, a national oil company in the Middle East undertook a project of digging seven knowledge wells – to continue our metaphor – to restore the pioneering spirit of its early years, in the face of IOC[3] partners that intended to impose their own policies and standards. These partners, particularly through their EPCs, wanted to convince the national oil company to standardize its processes and automate the majority of its installations in order to accelerate production. The IOCs were fixated on the short-term cycles of their operating licenses, which promoted standardization and automation, while the national oil company was focused on the long-term cycle of the full reservoir life. The IOC model is influenced by the industrialization (standardization, massification, economies of scale) of American clusters conceived for the production of non-conventional resources – shale oil & gas – whereas the national oil company followed an EOR[4] way, customizing operating modes according to the particular maturity of each reservoir.

By the same token, the transfer of a mature field during an operating-license renewal is an ideal opportunity to directly observe the contrast in an IOC methodology versus an NOC philosophy. On behalf of its client, which sought to restore the legitimacy of its national mission and its technical credibility, ADL drilled those seven wells of knowledge. They were anchor points placed in different levels of the organization (CEO, operations manager, asset managers, etc.), and also at key points along the value chain (exploration, drilling, development, production and planning): (i) the memory and narrative identity of the national oil company; (ii) the future of production and reserves renewal; (iii) the maturity of reservoirs and facilities; (iv) the management of contracts with local suppliers; (v) the international cooperation and competition; (vi) the land use management; and (vii) the creation and development of a national petroleum school. The ultimate goal was to outline a vision for the future that would match the prestige of the national oil company's history by awakening its memory and recording its industrial heritage (not only the resilience of its facilities after a century, but also its know-how, identity and legitimacy).

Another ARTHUR D. LITTLE project, with comparable dynamics but for a different national oil company, was the mapping of the architecture of a production system, from the reservoir's geology to the production forecast. The objective was to remind the assets, scattered along a 3,000 km diagonal, that they belonged to the same production chain. A third interesting case was the establishment of a national petrochemical company from old distillation units and new steam-cracking plants. The approach was, counter-intuitively, to construct the new with the old, aggregating and harmonizing experience acquired from other plants, in order to accelerate the emergence of an operational memory that combined technical control with the use of automation.

3 IOC: International Oil Company, NOC: National Oil Company
4 EOR: Enhanced Oil Recovery/Tertiary Recovery Stage

5. National oil companies are unique actors

ADL'S consultants retained numerous observations from their missions at the foggy foothills of the Assam mountains, aboard platforms on the offshore fields of Qatar, on the gray plateaux of the Laghouat gas fields and among the moving dunes of Rub' Al Khali. These notations are snapshots, sometimes even aphorisms, recorded during meetings or discussions, which testify to the traditions and practices of national oil companies. They reveal an intimate knowledge of the identity of these particular enterprises, which a superficial or mercenary gaze would not perceive.

- National oil companies are wardens of their reservoirs' memories. Their role is to make things last – reservoirs and infrastructure. Maturity is one of their distinctive features.
- National oil companies are slow-footed, but they remain beholden to their reservoirs. This is in stark contrast to new, unconventional operators that favor speed, short-term and massification in their operations.
- National oil companies preserve the memory of their first wells. They conserve the pre-nationalization buildings: in Digboi in Assam, in Irara in Hassi Messaoud, in Ahmadi in Kuwait.
- National oil companies are institutions with a historical sense of protocol. Their leaders' instructions are handwritten and stamp sealed.
- National oil companies manage frontier territories, they build roads through deserts and jungles, and their logos figure on the miles signs of the paths they open.
- National oil companies have social brownfields in their portfolios, which are operated to maintain employment in remote areas.
- National oil companies offer lifetime employment, but sometimes also short careers.
- National oil companies have a double agenda: to optimize production levels and to respond to the requests inherent to the activities of a state monopoly.
- National oil companies fuel the economies of their countries. They constitute two sources of income: one is the sale of their production on behalf of the state; the other, for their partner suppliers, is their spending, purchases, investments, and supporting the local industrial fabric.
- National oil companies appreciate consultants who, refraining from the transactional amnesia of the Chicago boys[5], prefer to slip into the memory of their clients' organizations to understand what they need to perpetuate as the changes they design are implemented.

The games of the traditional relationship between IOCs and NOCs, shaped as far back as the first oil shock, were replaced by an asymmetrical situation created by the American production of shale gas at first, and then of shale oil. US operators have drastically reduced their costs by industrializing their drilling and standardizing their operating practices. This crisis, linked to an abundance of oil available on the market, has led to the emergence of a new model for an oil industry already facing strong environmental pressures and global warming. Did the "shale revolution" and its industrial implications precipitate the roll-out of the energy transition?

Challenging the endurance of the oil industry obviously calls into question the perpetuity of national oil companies. Their industrial *raison d'être* has mutated while their mandate has remained the same, making it even harder to solve the evolving equation. Their government authorities have set changes in motion: opening up capital to private investors, introducing contractual creativity in partnerships with IOCs and service companies, subsidizing support activities, etc. But such projects cannot proceed without a thorough interrogation of their aspirations.

5 So, shall we call those consultants, byproducts of globalization, who impose on their customers their rigid terms and conditions. Inspired by the Chicago school of economics – University of Chicago, most notably by Milton FRIEDMAN.

The ideology that favored the creation of national companies is long buried. Primary recovery nationalism[6] – at its peak in the 1970s – disintegrated, benefiting an ideology of competition between reservoirs, technologies, men, etc. The evolution of operating conditions towards an increasingly complex secondary recovery has undoubtedly accelerated the decline of hydrocarbon nationalism. Faced with the end of that world, national oil companies hurry to solicit proselytizing consultants to define mechanical strategies. However, the creation of a federating vision, before any strategy, could forge an alloy of memory and future – a dialectic of memory keepers and dream catchers. A vision based on themes common to all state hydrocarbon monopolies: optimization of exploration and renewal of reserves, control of production levels according to the erratic needs of the market, development of a competitive processing industry (integrating refining and petrochemicals), and reformulation of the energy transition in national terms. National oil companies would also become producers of renewable energy, the development of which could be financed through controlled privatization of traditional activities. In other words, the privatization of fossil energy could finance the nationalization of renewable energies.

While such a vision is debatable, it could nonetheless help national oil companies write the story of their future by exploring the *raison d'être*, their memory and ambition. Before deciding, planning, or implementing any strategic action, the objective of this story-telling approach is to restore the choice about their future back to national oil companies – a choice they have lost during the transformations of recent years.

ARTHUR D. LITTLE, a centenarian consulting firm bearing the name of its founder, shares with national oil companies this sense of perpetuity across history. During those years of working on strategy, culture, organization, and performance of state monopolies in Mexico, Algeria, Kuwait and Indonesia, ADL acquired the conviction that national oil companies must embrace their singularity: an amalgam of patriotism, memory and knowledge. It is through the strength of this blend that national oil companies may constructively manage the evolving equation, in relationships with their government authorities. The lesson of this hydrocarbon nationalism, at its peak in the 1970s, remains auspicious today: the future of a national oil company hinges as much on reserves renewal investments as it does on creative decision-making against threats to the oil & gas industry's sustainability.

6 It was at the primary recovery stage that most nationalizations took place

Contacts

If you would like more information or to arrange an informal discussion on the issues raised here and how they affect your business, please contact:

Austria
Michael Kruse
kruse.michael@adlittle.com

Belgium
Kurt Baes
baes.kurt@adlittle.com

China
Russell Pell
pell.russell@adlittle.com

Czech Republic
Dean Brabec
brabec.dean@adlittle.com

France
Vincent Bamberger
bamberger.vincent@adlittle.com

Germany
Michael Kruse
kruse.michael@adlittle.com

India
Srini Srinivasan
srinivasan.srini@adlittle.com

Italy
Stefano Milanese
milanese.stefano@adlittle.com

Japan
Yotaro Akamine
akamine.yotaro@adlittle.com

Korea
Kevin Lee
lee.kevin@adlittle.com

Latin America
Daniel Monzón
monzon.daniel@adlittle.com

Middle East
Alexandre Lavelle
lavelle.alexandre@adlittle.com

The Netherlands
Martijn Eikelenboom
eikelenboom.martijn@adlittle.com

Norway
Diego Mackee
mackee.diego@adlittle.com

Singapore
Yuma Ito
ito.yuma@adlittle.com

Spain
David Borras
borras.david@adlittle.com

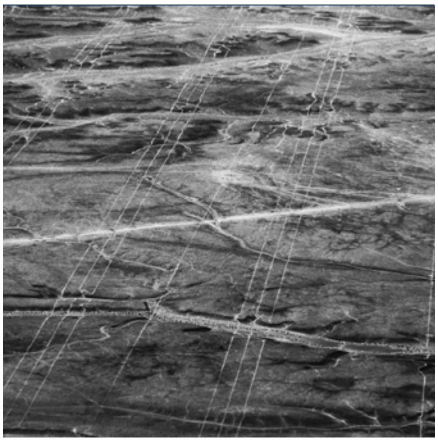
Sweden
Diego Mackee
mackee.diego@adlittle.com

Switzerland
Michael Kruse
kruse.michael@adlittle.com

Turkey
Coskun Baban
baban.coskun@adlittle.com

UK
Stephen Rogers
rogers.stephen@adlittle.com

USA
Rodolfo Guzman
guzman.rodolfo@adlittle.com



In praise of perpetuity – National oil companies manifesto

Arthur D. Little

Arthur D. Little has been at the forefront of innovation since 1886. We are an acknowledged thought leader in linking strategy, innovation and transformation in technology-intensive and converging industries. We navigate our clients through changing business ecosystems to uncover new growth opportunities. We enable our clients to build innovation capabilities and transform their organizations.

Our consultants have strong practical industry experience combined with excellent knowledge of key trends and dynamics. Arthur D. Little is present in the most important business centers around the world. We are proud to serve most of the Fortune 1000 companies, in addition to other leading firms and public sector organizations.

For further information, please visit **www.adl.com**.

www.adl.com/nationaloilcompaniesmanifesto