1 Introduction and overview

Saudi Aramco was never intended to be the national oil company (NOC) of Saudi Arabia. Instead, that outcome was an accident of history. In the early 1970s the government of Saudi Arabia was caught in the rising tide of Arab nationalism and had little choice but to nationalize the Western-owned oil assets across most of the country. The company it intended as its national firm performed badly, and that left Aramco to fill the void. Aramco was the Western-operated oil company whose owners were formally changing with nationalization but whose operations were barely affected. It was the most competent institution in the country and attracted the best talent. Among NOCs today, Saudi Aramco’s governance and performance appear to be stellar. Yet it is difficult to compare Aramco with other NOCs because its sheer size and importance to the world oil market are unlike any of its peers. And comparisons are also clouded by Aramco’s (and Saudi Arabia’s) intense secrecy.

This chapter explores the origins and operations of Aramco (section 2) and focuses on the firm’s governance and strategy (section 3), relationship to the government (section 4), and performance (section 5). It makes four broad arguments.

First, it is extremely difficult to judge Aramco’s strategy and performance because the company’s operations are shrouded in secrecy. Mindful of that caveat, the company’s performance appears to be high. That performance is rooted in the fact that as Aramco became Saudi Arabia’s NOC it experienced minimal disruption in its operations. It has endured none of the wrenching experiences that other NOCs experienced (such as in Venezuela or Iran) that emptied them of talent and caused managers to lose focus on their mission of finding and extracting oil.

Second, Saudi Aramco provides a convincing example of how an NOC, run by technocrats and to a great extent insulated from political
interference, can produce what appears to be a first-rate corporate performance. What particularly emerges is the importance of the governance of the oil sector. This involves the clarity of roles and responsibilities within the sector; the importance of enabling to allow the actors to carry out the roles assigned; and the importance of accountability of decision making and performance. The Saudi government is strong and stable with clearly defined goals; those attributes allow Saudi Aramco to adopt a long-term perspective. Because the firm—more by accident than design—has a Western-style corporate culture and invests heavily in education and technology it has used the opportunity of a long-term perspective to develop and pursue clear strategic goals.

Third, while it is clear that transparency within Saudi Arabia—in particular, between the NOC and the government owner—is important for corporate performance, external transparency appears not to be a necessary condition for success. Internal transparency makes it easier for Aramco's owner to oversee and control its operations, but the lack of external transparency makes it difficult for other owners to close the information gap through comparisons between Aramco and other firms. That gap is a critical element of the principal-agent relationship that exists between NOCs and their regulators and has proved so difficult for many countries to manage.

Fourth, Saudi Arabia is blessed with rich geology, which has meant that the company has not struggled much with the need to invest in extremely complex frontier projects. As existing large fields deplete and the need for such investments arises, differences between the company's mission (producing oil as a monopolist) and the country's mission (revenue and other benefits for the Saudi people) may arise. So far, the company's strategy reflects its obedience to the Saudi state although the state's and the company's strategies have sometimes clashed, most obviously over a state initiative in 1998 to open portions of exploration and production to Western companies. Had oil prices stayed low that initiative would have remained a major source of tension, but with the relatively higher prices that have prevailed since 2001 there has been little pressure on the government to seek more competition in its oil sector. It is also important to remember that the company retains the trust of the government and this is central to its role in the oil sector.

2 The accidental NOC

Other studies have explored Saudi Aramco's history in more detail. Here I examine the highlights and focus on a central observation: Saudi Aramco's deep private sector legacy and the government's respect for that legacy are crucial to understanding the company's story and its performance today.

The company began as a traditional "old-style concession agreement" typical of the relationship established between Western major oil companies and the state. The first agreement was signed in 1933 between Standard Oil of California (SOCAI)—which assigned its rights to the wholly owned subsidiary California Arabian Standard Oil Company (CASOC) — and the Kingdom of Saudi Arabia, a newly created state in 1932. The agreement had a life of sixty years and covered most of the kingdom (617,000 square miles of Saudi Arabia's total 860,000-square-mile territory). While the contract included a clause allowing for the company to relinquish the territory to the government, this was entirely at the discretion of SOCAI. It was not until 1948 that the company—by then called Aramco—agreed on
a program of relinquishment. By 1963, Aramco had relinquished 75 percent of its original concession."

The terms, similar to those signed in Kuwait, Iran, and Iraq, granted SOCAL exclusive rights to explore for and exploit oil. It also created a firm separation between Saudi Arabia's political sphere and SOCAL's commercial operations. The company, for example, agreed not to interfere with "administrative, political, or religious affairs within Saudi Arabia" (Article 36) while the kingdom granted SOCAL complete managerial freedom in its operations. The financial terms involved upfront loans to the government and a royalty of four gold shillings per ton. The government agreed to forgo its right to impose taxes for all time (Article 21) while also suggesting some social obligations for the firm. For example, "as far as practicable" SOCAL would employ "Saudi Arab nationals" (Article 23).

CASOC spudded its first well in April 1933 and by 1938 had found oil in large, commercial quantities. Indeed, as the huge size of the discovery became apparent there was growing concern that such a large amount of oil would seriously destabilize international oil markets. An existing pricing agreement (dating from 1928) would in theory govern this kind of eventuality, but the fund was so large it was unclear if that agreement would hold. In addition, SOCAL faced a serious practical problem: it lacked the outlets to handle such large amounts of oil. At the same time, the Texas Oil Company (Texaco) was increasing its global product sales but had no foreign sources of crude. Thus in July 1936, SOCAL and Texaco converted CASOC into a fifty-fifty joint venture — they married SOCAL's Saudi supply with Texaco's downstream markets.

World War II froze any further developments and also hurt the finances of the Saudi Kingdom, not least because the government's other main source of revenue — pilgrims visiting Mecca — also dried up during the war. CASOC stepped in (with some assistance from the US government) with loans in advance of royalties. The outcome was even more positive relations between the company and the king.

In 1944 CASOC changed its name to the Arabian American Oil Company (Aramco). Still mindful of just how much oil Aramco was sitting on and the difficulty of securing markets for the crude, negotiations began with Exxon and Mobil (using their modern names). By 1948 Aramco was owned by SOCAL (30 percent), Texaco (30 percent), Exxon (30 percent), and Mobil (10 percent).

In 1947, Aramco produced 90,000 b/d. By 1951, production had risen to 278,000 b/d and by 1960 to 480,000 b/d or about 5.7 percent of the world's oil output (Darmstädter 1971). The Saudi government earned dramatically higher fees over the period. In 1947 revenues were $18 million; by 1960, this had risen to $334 million, in large part because of the introduction of a fifty-fifty profits tax in December 1950. Saudi Arabia was in fact the first Middle East producer to introduce a profits tax, following from Venezuela's introduction of such a tax in 1943.11

During the 1950s the Persian Gulf rapidly became a politically volatile region. Of particular importance was the Iranian nationalization of the Anglo-Iranian Oil Company in 1951. This presaged a period of growing dissatisfaction of producer governments in the Middle East with the terms of the "old-style concessions." Four issues dominated (Stevens 2008a). First was the very long life of the original concessions; in Iran, Iraq, Kuwait, and Saudi Arabia the average life was eighty-two years. The original sixty-year Saudi concession was extended about the time that Aramco added Exxon and Mobil to its members, with the logic that there was so much oil that a longer period would be needed for marketing.

Second, the areas covered by the agreements were huge. In the four main countries, 88 percent of the national area was covered including all of Iraq and Kuwait. Furthermore there were no required relinquishment clauses. The companies could simply sit on acreage, including commercial discoveries, without yielding revenue and other local benefits.

Third, there was growing dissatisfaction with the fiscal terms. While profit taxes rapidly spread in the Middle East after Saudi Arabia led the way, still more disputes arose over the setting of posted prices used to compute revenue and other factors that affected the benefits that host governments gained from their oil production. Indeed, once the host governments started focusing on the fiscal terms of the concessions, they became wary that the Western companies that controlled the concessions were providing accurate information about real costs and opportunities.

The final and main source of dispute was that the concession gave the majors total managerial freedom within their concession-areas. Given the size of these areas, this freedom effectively gave them the power of being a state within a state able to make decisions unilaterally
on exploration, development, and production – decisions normally vested in the state itself.

As the 1950s and 1960s progressed, these dissatisfactions yielded a string of disputes that often soured relations between the producer governments and the major Western firms that operated the oil fields. Aramco, however, was different; disputes arose but they were muted. This was especially true after the rather radical Saudi oil minister Abdullah Tariki was replaced in 1962 by the more amenable young lawyer Ahmed Zaki Yamani. While Yamani was certainly no pushover for the Aramco partners and negotiated fiercely over issues of importance to Saudi Arabia, he was at pains to keep politics out of such discussions. The discussions and negotiations were based much more on technical, engineering, and commercial considerations than gesture politics. King Faisal encouraged this approach and left Yamani to oversee its implementation.

This different history for Saudi Arabia in comparison with other oil-rich countries of the region reflected, in part, a quite different political context. In other countries the drivers to change concession agreements included factors such as post-colonial desires (especially evident in Algeria, Iran, Iraq, and Kuwait13) that created pressure on governments to demonstrate independence. Those same pressures inspired the rise of the concept of “permanent sovereignty” over natural resources. In 1952, the UN General Assembly passed its first resolution on this issue; in 1962, a UN resolution recognized the rights of a country to dispose of its natural wealth in accordance with its national interests; in 1966, UN Resolution 2158 was even more explicit and host countries were advised to secure maximum exploitation of natural resources by the accelerated acquisition of full control over production operations, management, and marketing.

Saudi Arabia’s colonial past did not generate the same popular resentment as elsewhere. Although the regional elements that made up the kingdom had been part of the Ottoman Empire, this had been an extremely loose and undemanding relationship since the middle of the nineteenth century. Furthermore, the Aramco partners were all American and therefore relatively untainted by the colonial footprint of Britain and France. Indeed the US stand over the Suez fiasco in 1956 endeared the United States to Arab popular opinion. This was reinforced by the special relationship that developed between the Al Saud ruling family and various US administrations over many years, starting notably with the US role in orchestrating financial assistance that helped Ibn Saud’s political survival. The Saudi population was small and relativelyapoliticized. There were few popular demonstrations in Saudi Arabia where the ruling family was securely in power, even as such demonstrations became commonplace in other parts of the Arab world.14 In addition to this, Aramco by virtue of the funds and services it made available to the Saudi government15 built strong support for its continuing operations.

The fallout from the Iranian nationalization of 1951 also left the American management of Aramco shocked and disturbed by the deep and bitter hatred that the Iranian population displayed toward the Anglo-Iranian oil company. It took this as a salutary lesson of the dangers of arrogant British management that made no effort to integrate its company into the Iranian economy, employed Iranians only for menial work, and saw its only local responsibility as payment of taxes to the Iranian government. For Aramco’s management, the lesson led to considerable efforts to integrate the company into Saudi Arabia while still staying removed from Saudi politics.16 Heeding this lesson proved difficult in part because the Eastern Province of the kingdom (where most of Aramco’s oil operations concentrated) had no infrastructure apart from a few limited port facilities and some airstrips, let alone any productive economic activities.17 Effectively in such circumstances the company had no choice but to take on a number of state functions.

And so, over the 1950s the corporate culture within Aramco shifted. The company sought to maximize the employment of Saudi nationals at all levels in the company. (In this respect, the Saudi and Venezuelan pre-nationalization experiences were similar. See Chapter 10.) Given the total lack of any formal education system in the kingdom, this required investing in Saudi capabilities with a very long-term perspective. Thus young Saudi nationals who held junior, unskilled posts were selected for further education and training; the best were sent abroad for school. One legacy of this investment was a rising number of Saudis employed in increasingly higher-level positions as well as an enormous esprit de corps among the Saudi employees. To be an “Aramcan” became a major badge of pride for the Saudi employees and opened doors that would have been unthinkable in other oil companies in the region.18 Many of Aramco’s Saudi employees became American corporate animals through and through.
impossible to dissolve. It also sought to squeeze out the newly arrived
small independent oil companies that were undermining the price
structure 19 and to send a credible signal to other possible nationalists
to avoid upsetting the stable industry organization that had served
the large incumbents well. The result of Yamani’s efforts was the October
1972 General Agreement on Participation.20 This gave the govern-
ments an initial 25 percent equity that was scheduled to rise to 51
percent in January 1982.

Events on the ground fanned still hotter flames of nationalization
and (in nearly all governments except Saudi Arabia) eclipsed Yamani’s
vision for an orderly shift in participation. In 1971–1972, Algeria and
Iraq nationalized their operating companies. Iran withdrew from the
final negotiations on “participation” on the grounds that it already
“owned” the operating company following the 1951 nationalization.
Libya in 1973 announced much better terms from its participation
negotiations including an immediate 51 percent equity share. And
finally, the Kuwait National Assembly demanded and obtained even
higher levels of equity participation, soon reaching 100 percent in
1974. Despite these developments, there was little appetite in Saudi
Arabia to speed up the terms of the 1972 agreement because, unlike in
most other countries in the region, there was little public mobilization
on the streets and most elites believed that continued ownership by
the US majors would be more lucrative to the kingdom than outright
nationalization. In a context where the company was run on com-
mercial lines and was increasingly employing Saudis and helping the
domestic development process, there seemed few benefits from pur-
suing full control. However, in a region as politically competitive as
the Middle East the Al Saud could not be seen to be lagging behind.21

In February 1974, rumors began to circulate that Saudi Arabia was
looking to take over 100% of Aramco (Stevens 1975). Once Kuwait
announced (in 1974) it would fully nationalize 100% of its oil com-
pany a political “bidding war” emerged; no government wanted to
look softer on outsiders than the other. By 1976 Aramco became a
de facto 100% Saudi-owned oil company, although the precise dating
is uncertain because of the complicated legal status of Aramco as a
company incorporated in Delaware.22

In many ways, nationalization had little impact on Aramco. Not
even the name on the door had changed. (Again, the comparison
with Venezuela remains strong. See Chapter 10.) However, over
this same period the Saudi government adopted a sweeping series of changes in the organization and structure of its oil sector: a process that had already been under way since 1962 when King Faisal took control over the country and the government sought to create an NOC. It looked not to Aramco but instead to a newly created government body, the General Organization of Petroleum and Minerals (Petromin).  

The plan was to turn Petromin into the NOC in waiting with the function of replacing Aramco when the time came. With that aspiration in mind, Petromin's wide mandate covered all exploration, refining, and distribution for oil, gas, and minerals outside the areas controlled by Aramco. It was to be financed from transfers from the central government’s budget. During the 1960s, it became the main vehicle for industrialization in the kingdom. It was involved in various mineral projects, exploration, distribution of gas and oil domestically, and also created an oil shipping company. It planned heavy industry joint ventures (with Petromin holding at least 50 percent of the equity), but most of these ambitions were beyond Petromin’s capabilities and sank without a trace. By 1970 it employed more than 3,000 but the view was that the employees were underqualified not least because Petromin’s governor “didn’t like subordinates who were too smart” (Hertog 2008, p. 11). The governor kept strong central control yet the organization’s administrative structure remained confused.

After the first oil shock of 1973, Petromin’s ambitions strengthened. It announced a series of major export refinery and petrochemical joint ventures with Mitsubishi, Shell, Dow, and Mobil; steel mills with BHP and Marcona; and a major gas-gathering program. Petromin also took on the marketing of the crude oil the government obtained from the new participation agreement. In January 1975, Petromin announced a five-year investment program of $13 billion. To put this in perspective, in that year, the gross fixed capital formation for the country totaled $8 billion. Petromin was clearly trying to dominate the oil sector.

In parallel with Petromin, the government also created the Central Planning Organization with the goal of overseeing economic development of the kingdom. Hisham Nazer, an archivist of Petromin’s boss, was selected as president, and when it started its first five-year plan in 1970, it was clear that this new organization was at odds with Petromin’s own vision for itself.

The fate of these rival organizations, and most others in the kingdom, hinged on the jockeying for power that occurred after 1975 when Faisal was assassinated and Khalid came to the throne and Prince Fahd became crown prince. Khalid gave Fahd a free hand to oversee Saudi economic development. (By the early 1970s Prince Fahd had already become the effective driver of economic policy and sought rapid industrialization. In 1973 he was named chairman of the Supreme Petroleum Council [SPC], the apparent controller of the oil sector.) In October 1975, the Central Planning Organization became a ministry and Hisham Nazer joined the cabinet as minister of planning. Quickly, Petromin’s rival organization dismantled its key projects. The various petrochemical projects were handed over to the ministry, which subsequently created SABIC (Saudi Basic Industries Corporation) in 1976 to oversee their development. This also coincided with the creation of the Royal Commission for Jubail and Yanbu, which further undermined Petromin’s position. Significantly, 30 percent of SABIC was sold off to the public and some saw this as a clear indication that the kingdom was moving away from the statist approach characterized by Petromin to a more market orientation (Hertog 2008). This in a way should have been no surprise given that the majority of the younger Saudis making the decisions had all been through American universities that emphasized the advantages of markets over state interference. Petromin was left with just refining and marketing and distribution activities.

Petromin’s troubles were not just political but also managerial as the enterprise was increasingly seen as inefficient and ineffective. By the late 1970s Petromin was responsible for selling 1.5–2 million b/d of oil that the country obtained through the participation agreement but as a result began to get a bad reputation for “large-scale improbity” (Hertog 2008, p. 20). In 1979 there was a huge scandal over an Eni deal whereby the Italian company paid a $115 million commission for an oil supply contract. Half went to Italian politicians and the other half to various Saudis. By the early 1980s the refinery projects that Petromin still controlled were in trouble; from 1970 to 1984 Petromin’s output of refined product had increased only from 226,000 b/d to 349,000 b/d despite huge inflows of capital. It had grown to a “bureaucratic behemoth planning to employ a further 12,000 staff by 1985.” It was losing money and its refinery projects were seriously delayed. As Petromin faltered the government reorganized itself around a new NOC.
In November 1988 a royal decree created Saudi Aramco with Hisham Nazer as chairman to take control of all of Aramco's assets. The SPC, which was supposed to set petroleum policy for the kingdom, was given the official function of approving the company's five-year plans and annual report. It was also tasked with appointing Saudi Aramco's president (upon advice from the main board). In reality, as will be explained below, its actual function was little more than a rubber stamp. Petromin's assets were eventually stripped and reassigned. The lube companies were consolidated by the Ministry of Petroleum and Minerals into Petrolube and Luberef. Its refinery operations were transferred to a new company (the Saudi Arabian Marketing and Refining Company, or Samarec) that was more independent than Petromin. By 1992 Samarec was effectively bankrupt and in June 1993 it was dissolved and its assets taken over by Saudi Aramco. By October 2003 the process was fully complete and Petromin was formally dissolved and its remaining assets handed over to Saudi Aramco. The outcome was a victory for commercialization, markets versus statist options, and for a more performance-driven culture. I was visiting Saudi Arabia at the time of the Samarec takeover in 1993. After a long day of meetings between the Saudi Aramco management and Samarec to discuss the way forward, the Saudi Aramco chair of one meeting suggested reconvening in the morning at 7:00 a.m. When some of the Samarec management objected to such an early start the reply was "Seven o'clock sharp. You are working for Saudi Aramco now!"

3 Saudi Aramco's relationship with the government

Saudi Aramco has always had two objectives. The first is to be a highly successful commercial oil company; later I explore how it achieves that goal. But the second objective is even more vital to its survival: be the supporter of the Saudi national mission. This dual strategy is best expressed in the so-called "golden quadrant idea" (Figure 5.2). All projects can be evaluated on commercial and social terms. Saudi Aramco's managers attempt to locate projects that score well on both dimensions (that is, those in the top right hand corner of Figure 5.2). Appealing in theory, this practice has often yielded tension since the government is particularly keen for Aramco to maximize the social benefit, even at the expense of commercial probity. Determining which projects are prized for their social benefits and how the government gets Aramco to pursue them requires looking more closely at the relationship between the enterprise and the state, which is the task of this section.

In 1976 at the time of the takeover of Aramco by the Saudi state, the government's objectives were threefold. First and foremost was survival of the Al Saud ruling family. Saudi Arabia, the country, to all intents and purposes is a family firm. It was created by Abdul Aziz Ibn Saud in 1932 for the benefit of the Al Saud, and the family's prime objective is survival and retention of power and control. All policy objectives in the kingdom are subordinated to that central objective. Most large oil exporters pursue a similar goal, with the result that the NOC is organized to maximize its contributions to the national mission in ways that ensure the popularity of the ruling elite and provide sufficient resources to contain dissent. (For more on government goals see Chapter 2.) In the case of Saudi Arabia, that commonplace goal is combined with the country's unique position in the international oil market due to its large producing capacity and unique ability to carry spare producing capacity. This added a further dimension: Since much of Saudi Arabia's foreign policy revolves around management of the oil market and a lot of the oil market revolves around Saudi oil, Saudi Aramco became an instrument of Saudi foreign policy. However, it remains dangerous to assume linkages between Saudi Aramco's commercial operations and the government's foreign policy on an a priori basis. An example illustrates. Just after the Iraqi invasion of Kuwait in 1990, the Saudi government was negotiating the US troop buildup in response to the invasion. At the time, Saudi Aramco notified its crude

Figure 5.2 Golden quadrant idea.
customers that there would be a sharp reduction in supplies for the September liftings. Commentators linked the two together asserting the cutback was part of the Saudi negotiating strategy. The reality was that the ministry before the invasion had made the decision to cut back. No one had informed the company to do otherwise. Once the problem was realized all customers were informed that every effort was under way to increase output and extra barrels would be available. The commentators then decided that Saudi Arabia was caving into US pressure!

Second, the Saudi government seeks economic prosperity, which is a necessary (and perhaps also sufficient) condition for survival of the regime and political stability. Thus policy in the petroleum sector has always been closely aligned with the broader development policy objectives of the Saudi government. In practice, the government has struggled to create prosperity outside the oil sector. The eighth five-year plan was launched in December 2005 and contains twelve objectives that are perennial features of earlier plans. They include diversification of the economy and increasing employment for nationals. In turn, these objectives inspire twenty-one “strategies.” This plan also claimed to be different from its seven predecessors with its long-term focus to 2024.

Third, the government has sought control of the oil and gas sector to provide financial levers to confirm its legitimacy. Ever since the state’s origins, access to funds has been essential for government to assert legitimacy. Firm control over the sector also allows the government to more readily achieve its other goals. However, the state’s capacity to regulate the sector – let alone operate oil projects – was weak. Therefore it made sense to leave management of most oil issues to Saudi Aramco once the government agreed on the broad strategy. As the government’s own capabilities have grown, it has asserted more authority.34

Many other NOCs in this book display a divergence between the goals of the state and the behavior of the NOC as its agent. The NOCs become “states within a state” and pursue rents for their own purposes. Saudi Aramco is different because its corporate culture is inextricably linked with Saudi objectives; the firm’s top managers see themselves as guardians of the country’s patrimony. Given that the survival of the regime requires strong economic development within the kingdom and that this in turn requires a strong performance from Saudi

Aramco, it is not clear that the objectives of the state and the corporation conflict. This theory, however, was rarely tested until the government attempted to open the upstream in 1998, which appeared to reveal (for a moment) a deep divergence in goals and strategy between the government and its NOC.

3.1 Regulating the oil sector

The system for regulating the oil sector reflects the government’s central goals. The ruling family has ultimate control, but as a practical matter it delegates authority to a well-developed system of public administration. The cornerstone to the formal system is the Supreme Petroleum Council (SPC, renamed in 2000 the Supreme Council on Petroleum and Mineral Affairs, SCPMA). The SPC was supposed to be the effective overseer of the oil sector, allowing other ministries to have some say over how the oil sector operates. Specifically it endorses Saudi Aramco’s five-year operating and investment plan and reviews the annual report and accounts of Saudi Aramco and appoints its CEO. In practice the SPC was a means of having a select group of Saudi private citizens, the royal family members, and other ministers play a role in the process. As indicated earlier, in reality its role was minimal and it was the ministry that acted as the government’s overseer of the company.35 For most of the time the SPC simply approved whatever was presented by the board of Saudi Aramco. It has never acted to stop any program of the company or direct any of its activities. The ministry acts as a conduit between the king and his small group of advisors who pass onto the ministry questions or directions. The ministry then directs Saudi Aramco to take whatever action is required.36

This closed system of administration minimizing outside interference is crucial to Aramco’s success as an NOC because it makes the government goals for the firm clear and generally stable. It creates a protective wall around Saudi Aramco and helps the enterprise avoid the whims of bureaucrats or interest groups whose potential demands could pull Aramco in many directions and extract rents from the enterprise. The experience in neighboring Kuwait is a warning about the outcomes when no such protective wall is in place (see Chapter 8). The tight relationship benefits from clear lines of authority and a particularly close relationship between the company and the Ministry.
of Petroleum and Natural Resources. As will be developed below, the two institutions in practice are virtually indistinguishable despite their separate functions not least because of the constant exchange of personnel and the fact that the minister since 1995 is a product of Aramco training and corporate culture.33

Since the de facto accession of King Abdullah in 1999, the government has reformed its decision-making processes reflecting a concern that the old system had become ineffective and unnecessarily complex as it simply grew with new functions grafted as needed rather than following any overall strategy.34 Of particular importance was the creation in August 1999 of the (now) thirteen-member Supreme Economic Council, charged with setting strategy for the future development of the kingdom. Because of its overwhelming importance, decisions in the oil sector are the result of attempts at consensus among the senior family members (Obaid 2000), a process informed by expertise drawn mainly from Saudi Aramco and the oil ministry.35 Abdullah was particularly interested in creating opportunities for the private sector as part of the perennial effort to diversify the economy; a more visible role for the private sector was particularly important to securing entry into the WTO. To signal the shift, in January 2000, Abdullah reformed the SPC by creating the SCPMA – both kept their earlier tasks (i.e., at a de jure level governing Saudi Aramco) along with the new mandate to boost the role of the private sector.36

Table 5.1 summarizes the membership of the SCPMA and the Saudi Aramco board. The SCPMA membership is typical of NOC oversight bodies, but the board membership is unusual among NOCs because there are several outside members selected by virtue of their expertise rather than any official position. Indeed, the Saudi Aramco board is not unlike any IOC board containing non-executive directors.

In theory, SCPMA serves as the regulator for the national oil sector and oversees the activities of Saudi Aramco.37 In practice, Saudi Aramco is virtually self-regulating and SCPMA provides only light supervision, largely endorsing decisions taken by Saudi Aramco. On occasions, however, SCPMA takes a more proactive role, particularly when the issues are more political (such as the gas initiative, discussed later and in Box 5.1). The reason for this “light-touch” regulatory approach is that the SCPMA is dominated by members who believe that Saudi Aramco knows what it is doing and can be

<table>
<thead>
<tr>
<th>Table 5.1. Saudi Arabia – membership of oil governance institutions</th>
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<tbody>
<tr>
<td><strong>Supreme Council on Petroleum and Mineral Affairs</strong></td>
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<tr>
<td>Chair = Prime Minister (King)</td>
</tr>
<tr>
<td>Deputy Chair = Deputy Prime Minister (Crown Prince)</td>
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<tr>
<td>SCPMA</td>
</tr>
<tr>
<td>Eight Ministers</td>
</tr>
<tr>
<td>CEO of Saudi Aramco</td>
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<tr>
<td>Saudi Aramco Board</td>
</tr>
<tr>
<td>Chair = Minister of Petroleum and Natural Resources</td>
</tr>
<tr>
<td>Governor of the Capital Market Authority (CMA)</td>
</tr>
<tr>
<td>Minister of Finance and National Economy</td>
</tr>
<tr>
<td>President of King Abdulaziz City of Science and Technology (KACST)</td>
</tr>
<tr>
<td>Head of Saudi Aramco plus three Vice Presidents</td>
</tr>
<tr>
<td>Retired Presidents Marathon and Texaco; Former Vice Chairman of JPMorgan</td>
</tr>
</tbody>
</table>

**Box 5.1 The attempted opening of the upstream in Saudi Arabia**

In 1998 then Crown Prince Abdullah took the decision to try to open the upstream to IOCs. The subsequent events proved to be extremely instructive in terms of understanding how the Saudi petroleum sector works and Saudi Aramco’s role in it and they are worth considering at some length.38

This decision to open the upstream (oil and gas) in principle was taken in the summer of 1998 when the government considered a new position paper prepared by Ministry of Foreign Affairs. This paper was intended to map out a series of major economic reforms to develop the Saudi economy to meet the challenge of growing unemployment (especially among the younger population). The opening was intended to achieve several objectives. First, it was seen as a way to secure support from industrialized countries at a time of an oil price collapse when it was thought the kingdom’s purchase of large amounts of military hardware would be increasingly restricted. Second, the resulting investment was to be orientated
to providing large numbers of jobs for young Saudis. Third, there were increasing questions within the government, especially in the Ministry of Finance, regarding the performance of Saudi Aramco. Allowing some foreign investment in the petroleum sector was perceived as a mechanism to provide benchmarking and eventually competition.

The rollout of this upstream sector opening was rocky. Crown Prince Abdullah held a meeting in Washington at which the king invited the CEOs of US private oil majors to submit bids to the kingdom. The nature of the bids was deliberately left imprecise but the bids were supposed to present mutually beneficial opportunities for the IOCs and the kingdom. However, there seems to have been limited consultation with Saudi Aramco and the Ministry of Oil on the details of the process. Indeed it was said that while the CEOs of the IOCs were amused by the offer as it emerged in the meeting, Minister Naimi was even more amazed although there were apparently rumors circulating before the meeting that such an offer might be on the table and so this may not have been the case. There was a serious absence of detail provided to the IOCs that would be needed to allow them to make sensible bids.43

It was noticeable that the committee responsible for assessing the projects (created in September 1999) was poorly managed. It did little while its chairman, the Saudi Foreign Minister Prince Faisal, was absent due to illness. Only on his return in early 2000 did things begin to move but even so negotiations were painfully slow. The committee structured the talks in a way that made it very difficult for them to succeed. Thus the competing companies were forced into consortiums for each project preventing them from bidding against each other. The projects involved both upstream and downstream operations without any clear idea of how to structure such agreements. For example, the issue of how gas would be priced and how the tariffs for gas transportation and electricity and water produced from the projects would be set were part of the negotiations. Thus in effect the companies were forced to bid on projects whose economics were unknowable until the agreement was reached. The result was that the consortiums had no competitors and simply demanded a set rate of return on investment equal to the targets for all upstream operations. Yet most of the capital expenditure flowed from the (relatively low risk) utilities that made up the downstream elements of the projects.

Eventually it became clear to the IOCs that upstream oil was not to be on the agenda and attention regarding the opening therefore turned to gas. However, in this case the discussions came up against the completely unrealistic pricing system for gas in the kingdom of 75 cents per million BTU. At such a price the projects were simply not commercially viable even if the units to be fuelled were right on the gas field. In reality they were hundreds of miles away on the coast. On top of this of course was the obvious fact that Saudi Aramco was the only source of expertise competent to assess the IOC proposals and was very hostile to the idea of IOC involvement in the upstream in the kingdom. In December 2000, three core ventures in the Natural Gas Initiative were identified and ten IOCs were invited to bid. However, as indicated, the downstream gas projects being suggested were not highly attractive to the IOCs. They were mainly seeking involvement in the hope that the oil upstream would be opened at some point in the future. In any event, the outcome has been relatively disappointing. Four agreements were signed: SRAK (Shell 40%, Total 30%); Lukas (Lukoil 80%); Sino-Saudi Gas (Sinopec 80%); and a fourth consortium (Eni 50%, Repsol YPF 30%). After three dry wells, Total withdrew from SRAK and the general view is that “tough contract terms combined with surging upstream costs are making it difficult for foreign-led consortia that have made discoveries to convert their finds into commercially viable projects” (MEES 51:30, 1).

These events were a rare instance in which the government created hydrocarbon sector policy from above. Previously, it was Saudi Aramco and the Ministry of Oil that laid out plans and strategies for approval by the government. The “opening initiative” came from the government and was perceived by the oil sector as being imposed upon the oil technocrats much to their dismay. It took some time for the sector to reassert its dominance, but ultimately it was successful at doing so because of natural information asymmetries that advantaged operational firms in general and Aramco in particular.
trusted to implement an overall strategy that aligns with the goals of the country. Indeed, there has long been a culture of self-assessment of performance within Saudi Aramco. Aramco’s internal governance is marked by clear reporting lines and responsibility. However, the lack of independent assessment makes external observers raise concerns about the company’s performance. As is evident in most of the case studies in this book, there are large information asymmetries between the government and the NOC, and they offer many opportunities for rent seeking by the NOC. The extent of such rent seeking is unknown, however.

Thus, as a practical matter, SCPMA relies on the Ministry of Petroleum and Saudi Aramco, and Saudi Aramco relies on its internal procedures for performance assessment that are based on benchmarking exercises that are not transparent even within the company. While benchmarking can be quite effective in the downstream since the laws of physics and chemistry are the same all over the world and the relevant technologies relatively mature, in the upstream significant differences in geology raise doubts about its usefulness; Saudi geology provides for very low costs of exploration and production.

The one exception to the rule that SCPMA is unable to exert much oversight, at least in theory, is finances, which are highly transparent to the government and available to SCPMA. However, this information, which includes independently audited financial accounts, is not available outside of the SCPMA for the rest of the society or indeed any other part of the government (aside from the eight ministers that are members of the SCPMA). In effect, there is a degree of internal transparency of Saudi Aramco’s operations within the Saudi government but extreme opacity outside that small bubble. However, even within that small bubble there are limitations on transparency. The government gets detailed operating reports but these are just descriptions of what each unit has done under the plan but no detailed data is available even within the company. Government auditors only see the overall accounts and do not get business and operations data so they have to accept everything as being done correctly. This system appears on the surface to work well and raises doubts about one of the standard pieces of conventional wisdom offered by outside experts: that public disclosure of performance and other data is a requirement for effective operation. However, because of the lack of transparency it is not clear how much “working well” is simply because of the scale economies of very large fields rather than the company’s skills and technology. With fully built-up costs of crude production of around $2 per barrel a few cents here or there simply becomes “noise.”

Thus Saudi Aramco is left, largely, to regulate itself. Apart from production capacity levels (which are set by the government in the context of the kingdom’s special role in the world oil market) and a few other decisions, Saudi Aramco sets its own objectives and priorities. (Capacity decisions lie mainly with the ministry, which manages relations with the Organization of Petroleum Exporting Countries (OPEC) and prepares estimates on global supply and demand.) The vehicle for those choices is Aramco’s five-year rolling plan that is approved by the board and endorsed by the SCPMA through a process that at least in the past appears to have been largely a formality.

Unlike many other NOCs, which are integrated into the government’s financial structure, Saudi Aramco operates on a corporatized basis (Marcel 2006). It is allowed to keep its revenue from crude and product sales and then pays royalties and dividends equivalent to 93 percent of its profits. Sales of crude oil to its own domestic refineries are charged at long-run marginal cost, which is contrary to Western accounting practices but not regarded by the government as a subsidy. This corporate structure allows the company sufficient fiscal predictability to mobilize the capital and operating funds needed to fulfill its objectives. In certain cases involving very large investment projects, the company gets extra funding from the national budget overseen by the Ministry of Finance. When retained earnings are not sufficient, the company can enter the international capital markets to borrow to supplement its access to capital. It has only done this once: in 1996 in order to increase the capacity of its tanker fleet. However, even then it effectively prepaid the loan to avoid the necessity of financial disclosure normal in such transactions.

The company covers its operating costs after the payment of royalties but before paying dividends. This approach leaves Aramco to manage its daily operations with little external interference and a strong incentive to manage costs. Unlike many other NOCs, rumors of corruption in Saudi Aramco’s operations are relatively few and far between. It is interesting to reflect why this might be given that Saudi Arabia itself and many of the ruling family are infamous in terms of corrupt practices. Part of the explanation lies in the enterprise’s
own oversight of procurement and managerial processes: a legacy of its former Western partners, notably Exxon, which is famous in the industry for excellence in cost management.

As already indicated, Saudi Aramco's financial relations with the government are based upon a corporatized model. Thus it simply pays royalties, taxes, and dividends to the government in the same way that it did when it was a privately owned company. Unfortunately few details are available. Government accounts include only the line "oil revenues" with no further elaboration. Obviously, that line includes very large numbers, as shown in Figure 5.3 (total government revenue), Figure 5.4 (GDP), and Figure 5.5 (merchandise exports). Oil dominates all, especially government revenue and foreign exchange earnings. And the relatively low oil contribution to GDP is misleading because a significant part of GDP is created by government spending (and thus stems mainly from oil). Based on official reports, in 2008 31% of Saudi GDP was oil, but that fraction excluded the 22% of real GDP that came from the government sector funded largely by oil revenues. Thus the effective contribution of oil to GDP was much higher than 31%. Accounting is also complicated by the use of oil for barter, such as the Al-Yamamah deal whereby Britain sold Tornado aircraft in return for crude oil.

From these numbers, it is perfectly clear that the oil sector and Saudi Aramco's performance are crucial to the well-being of the kingdom.

4 Governance and strategy

The concept of corporate governance is difficult to pin down for state enterprises since state ownership often leads to corporate goals and practices that are different from conventional commercial firms. A group of NOCs recently attempted to outline their views of this question in the Chatham House Document "Good Governance of the National Petroleum Sector" (Lahn et al. 2007).

Its conclusions reveal that NOC managers worry about most of
the same factors that concern managers of commercial firms, such as the need for clarity in goals; freedom and ability of managers to perform assigned tasks; accountability for decision making; and transparency. By nearly all the principles identified in that document – except external transparency – Saudi Aramco scores well. We have already seen the reasons for this secrecy. Saudi Arabia is by nature a secretive society. It is also a very patriarchal society based upon “client-patron” relationships, which tends not to be conducive to the sharing of information. Consultation between rulers and ruled tends to occur at the level of individuals rather than collectively and is not governed by general procedures. As one Saudi Aramco manager remarked when challenged on the lack of external transparency “what right do people have to know when they pay no taxes and when the government provides all needed services” (Marcel 2006, p. 143).

Saudi Aramco’s organizational chart will be familiar in most other NOCs and commercial firms. The firm is headed by a president and CEO. Operations are divided into six areas (most important being exploration and production) each led by a senior vice president. Overall governance of the firm is shared between the president and CEO and the corporate management committee. This committee, which reviews all major operational decisions, dates to the 1940s when Aramco needed an institution for discussing strategy and aligning the interests of the Aramco partners. In 1950, Saudi representatives were included (Brown 1999). After the Saudi state fully took over the company in 1976 the committee continued. During the reign of Ali Naimi, the first Saudi CEO under full Saudi ownership, it consisted of the six senior VPs for the various business lines – with the accession of Jum’ah in 1995, the number of senior executives on the committee was increased and decision making became more based on a consensus approach. In 2009, Khalid Al Falih was appointed president and CEO as Jum’ah retired.

4.1 Human capital

A crucial part of the Saudi Aramco story is the fact that the company, unlike so many other NOCs, has been able to maintain control of its hiring and promotion decisions. It is under pressure to hire Saudis, to be sure, but that pressure is general and chronic throughout

the kingdom; particular employment decisions reside almost entirely within the company and are made through merit processes that are evident at some other well-performing NOCs such as Petrobras (see Chapter 12). Thus the management, unlike many other NOCs in the region, has been able to avoid being saddled with poorly performing staff. There is rumored to exist in Dhahran (Marcel 2006) an office block where poorly performing staff are given an office and then basically ignored and allowed to do whatever they want thereby preventing them from interfering with the operations of the company. (Firing such staff members is not a viable option in Saudi culture and in any case is restricted by law.) Saudi Aramco is very proud of the fact that it has developed a cadre of highly professional Saudis to run the company and this is very apparent from standard company documents that devote considerable attention to the issue. The company “seeks to be the best, to surpass other NOCs; it gives special emphasis to professionalism and technology” (Marcel 2006, p. 54). While promotion traditionally has been based upon merit, there is concern among senior management that this is weakening and that political loyalties are gaining influence.

Aramco and then Saudi Aramco adopted a mentoring system whereby potential senior management material effectively shadowed senior staff as part of their learning experience. This was particularly prevalent when the expatriate management was much larger than in recent years.

Executives come through the ranks and through an extremely thorough education and career development. It has been estimated that Saudi Aramco spends around $500 million per year on human resource development (Marcel 2008). The company runs the Industrial Training Centre in Dhahran. Employees spend an initial year there and if they pass they are then given full scholarship to use in overseas universities up to Ph.D. level. Since 1994, 4,800 Saudi nationals have succeeded in completing university degrees (Jaffe and Elss 2007). In 2009, the new CEO announced two new training initiatives – the Saudi Technical Petroleum Services Institute in Dammam and the General Organization for Technical Educational and Vocational Training located in Al Hasa. Both will provide technical education for Saudi Aramco employees but also for some from other local employers.

In August 2007 there was a major shakeup in the senior management. The main thrust was bringing in a younger generation of
executives. An important point is that these were products of Saudi Aramco as an NOC, whereas those being replaced had grown up within an Aramco dominated by the personnel of the Aramco partners. Thus the new generation has an imperative to modernize the company as well as a more global view than previous generations. For example, Abdullah Jum'ah, CEO for fourteen years, was with the company forty years and was trained by Aramco’s Western managers. The new CEO, Khalid Al Falih, joined the company only after the Saudi government had taken full ownership of the enterprise. He is an engineer (Jum’ah was a political scientist by education) and is expected to play a more hands-on role within the company (MEES 51:45). He has a reputation for hard work and as a very tough negotiator. It is widely expected that many contracts will face the prospects of renegotiation.

The CEO leads a company that incorporates two distinct cultures uneasily. The first is the culture of a large American multinational corporation. The language of the company is English and thirty years’ service is rewarded with a gold watch! It also continues to operate within a closed compound that is certainly physically separated from the immediate surroundings and is arguably also psychologically separated. Saudi women can drive within the walls of the compound. It has also been suggested that there exists a “fortress culture” that makes Saudi Aramco removed from Saudi society and realities (Marcel 2006).

The second dimension of Saudi Aramco’s culture is Saudi. Saudi society is very tightly controlled and is extremely formal and hierarchical. While Saudi Aramco is actually “less formal and hierarchical” (Marcel 2006, p. 62), inevitably there are elements of a mirror image. Individual initiative is not particularly encouraged and group loyalty is seen as extremely important, which is why employees are seldom critical, especially to outsiders. Indeed it is a noticeable trait of Saudi Aramco employees that they tend to avoid talking publicly. Managers tend to micromanage because “they are concerned about any wrongdoings or inefficiencies being uncovered on their watch” (Marcel 2006, p. 68). And the fortress culture described above may make the management resistant to change (Marcel 2006, p. 63).

These two cultures – Western corporate and Saudi – coexist. And much effort has gone into trying to formalize the company’s management culture. The most visible aspects of this make the company look like a normal, commercial firm – with the same slogans and goals. The Saudi element is more elusive and difficult to formalize.

Saudi Aramco appears to be a leading investor among NOCs in research and development. These investments include the massive contribution to human capital, including overseas training for the most promising employees, already discussed. In addition, there are dedicated research and development institutions. The most important is the Exploration and Petroleum Engineering Center (EXPEC), inaugurated in May 1983 to be responsible for R&D in the upstream. By 1993 it had become one of the largest upstream earth science and engineering centers in the industry. As a result, the company “has essentially eliminated its dependence on upstream technological support from other oil firms and now provides technical expertise and special services in-house in all facets of engineering and producing operations” (Sadad Al Hussein, quoted in Saudi Aramco World, September/October 1993). It is through EXPEC that Saudi Aramco has introduced a great many new technologies to the kingdom, ranging from advanced three-dimensional seismic surveying to horizontal drilling and geosteering. EXPEC has also spawned other institutions, such as the Advanced Research Center (EXPEC ARC) and a linked EXPEC Computer Center (ECC). ECC is responsible for seismic processing, interpretation, and modeling; reservoir simulation and description; graphic display and information management. Early in 2007 an external advisory council was created composed of five renowned international scientists and charged with ensuring that EXPEC did not become too inwardly focused (Amin H. Nasser, vice president, petroleum engineering and development, as reported by Saudi Aramco Week, February 26, 2007).

4.2 Strategy and investment choices

Ultimately, these factors – the company’s organization, its investment in human capital, and its culture – inform its choices in the context of operations and investments. Here we examine those choices, with a special focus on Saudi Aramco’s strategy.

In broad terms, as outlined earlier the company has three broad goals that drive its overall strategy. First, it sees itself as the guardian of the country’s patrimony, which influences the way in which it
manages the hydrocarbon resources. Second, it sees itself as the main agent in executing the state’s objectives. Third, controversially it can be said that it seeks to protect and develop the position of the company within the Saudi oil sector.

Given this context the company has developed strategies that for oil relate to recovery rates on the fields, capacity levels, production levels, marketing, and downstream issues and for gas relate to the nature of developments and the deployment of the gas resources. Each will be considered in turn.

4.2.1 Oil

4.2.1.1 Recovery rates and reserves

A long-standing and long-term objective has been to maximize recovery on the fields. Following this approach, Saudi Aramco has maintained a maximum annual depletion of 2–3 percent of the remaining reserves, which corresponds with a notional reserve life of thirty years from 2009. In a June 2008 speech, Amin Nasser explained that Saudi Aramco would not put any field into development without a minimum thirty-year plateau (MEES 51:26). The average recovery factor on the Saudi fields has been 50%, compared with an industry average of 35%; the target is to increase this level to 70%, which would be the equivalent of 80 billion barrels of extra reserves.

Regarding exploration, the official objective is to replace every barrel produced. Amin Nasser in his June 2008 speech argued that “a sense of stewardship and long-term sustainability run through the company” (MEES 51:26, 2). Higher production would require greater reserves. Thus in recent years the strategy has also been to create a considerable expansion in Saudi Aramco’s exploration efforts. The official target (MEES 51:26) is to increase original oil in place from the current (2008) level of 735 billion barrels to 930 within 20 years. Saudi Aramco does not include probable or possible reserves in its estimates. This makes its reserve estimates among the most conservative in the industry.

4.2.1.2 Production capacity

Since the early 1970s, Aramco and the government had been in discussion to determine the basis for a long-term plan for capacity expansion. Figures were mooted of 20 million b/d by the early 1980s but this was lowered to 16 million b/d as demand slowed following the first oil shock (Parra 2004). There was also concern that high production levels would produce a peak scenario (of 16 million b/d, which the company could not maintain for more than fifteen years). Under this scheme, investment in the necessary infrastructure would be unlikely to produce an acceptable return. As a result, the government imposed a ceiling of 8.5 million b/d in early 1978 just before the second oil shock.

Following the change in oil policy in mid 1985, a central plank of the Saudi oil strategy that has developed was to maintain a cushion of spare capacity to allow the kingdom to manage the international oil market. In particular, the aim was to limit price spikes in the event of any outage of crude oil production in the international markets. This was a key part of the strategy to maintain low and stable prices to try to reverse the moves away from oil as a primary energy source to the world, which resulted from the oil price shocks of the 1970s. While this role of developing and maintaining spare crude producing capacity was a major target for Saudi Aramco, it was in fact imposed by their government.

The stated objective was to maintain a cushion of spare capacity amounting to 1.5–2 million b/d to act as a stabilizing force for the global oil market. In 2005, the official capacity target was 12.5 million b/d by 2009, which appears to have been achieved. There was talk around 2004–2005 about expanding this to 15 million b/d (MEES 51:26). However, following growing concerns about future oil demand in 2007 this target although not being completely ruled out was being quietly dropped. It reemerged briefly in June 2008 at the producer–consumer meeting in Jiddah, where Saudi Arabia came under pressure from the major oil consumers to “do more” to mute the apparently inexorable rise in oil prices. However, the collapse in prices after July and the looming economic recession/depression following the collapse of Lehman Brothers in September 2008 has meant that such targets appear at least for the moment off the agenda.

4.2.1.3 Production

The actual production strategy has been, since 1985, to try to balance the international oil market to achieve the desired oil price target. Since 1985, the term “swing producer” became very much a dirty word in the Saudi oil sector given the pain incurred by this
Saudi Aramco's international strategy has been related to the crude export trade and the downstream. The company decided early on that it would divert Saudi national resources toward creating a strong downstream presence, leading to a reduced dependence on international markets. This strategy was driven by the desire to ensure sufficient capacity to carry its crude exports and to diversify its operations and profits. With the establishment of its downstream operations in 1992, Saudi Aramco aimed to establish itself as a leading producer of removing the kingdom's crude exports while also diversifying its portfolio.

Marketing

4.2.1.4 Marketing

Marketing activities are aimed at creating a strong downstream presence. The company already owned several refineries and was interested in developing others in regions with poor domestic prospects for further development. This strategy was aimed at reducing the kingdom's dependence on international markets and creating a more diversified revenue stream. Saudi Aramco's strategy involved expanding its refining capacity to ensure sufficient capacity to carry its crude exports.

In the early 1990s, the company decided to carry out large-scale investments to strengthen its downstream presence. This involved the development of several refineries and petrochemical plants, as well as the acquisition of existing facilities. These investments were aimed at creating a strong downstream presence, ensuring that Saudi Arabia's crude exports could be carried by the company's own facilities.

Promotions

Promotions were also used to support the company's downstream presence. Saudi Aramco's downstream operations were designed to create jobs and provide economic benefits to the local communities. The company was keen to establish itself as a major contributor to the local economies, which was achieved through the creation of new jobs and the provision of training programs for local workers.

Conclusion

Saudi Aramco's downstream strategy was successful in diversifying the company's revenue stream and reducing its dependence on the crude export trade. The company's downstream presence was further strengthened with the establishment of its downstream operations in 1992. This strategy helped the company to become a leading producer of crude oil and to diversify its operations and profits. The company's downstream operations were aimed at creating a strong presence in regions with poor domestic prospects for further development, leading to a reduced dependence on international markets.

References


Further Reading

leading development sector, which would shock the moribund economy into action by making extremely obvious the various bottlenecks such that even the poorest decision makers could see what was needed. For the oil-producing economies this sector would obviously be oil in all its dimensions, rather than just production of the commodity with other firms and countries gaining the value from upgrading the commodity to a final product. However, to promote development the economies had to reduce dependence on exporting crude oil.

Given these factors, Saudi Arabia announced four projects to build export refineries in the kingdom. In October 1975 in Damascus, a meeting of the Organization of Arab Petroleum Exporting Companies (OAPEC) was convened so members could compare their downstream plans. When the full extent of the plans emerged from the meeting, virtually all of the attendees scurried back to their capitals and cancelled the projects. The reason was simple. In 1975, refinery capacity outside of the Soviet Union was operating only at 70 percent (BP 2008) following the slowdown in oil demand after the first oil shock. This event had devastated refinery profitability and the prospect of even further unused capacity was extremely unattractive. The exception was Saudi Arabia, which decided to go ahead with its plans. However, the decision was made by the ministry that this new domestic refinery capacity would be based on joint ventures with IOCs.

The reasons for choosing the joint venture route to develop the domestic refineries were complex. First, there was the fact that Aramco had been an upstream company, Saudi Aramco was short of national technical and managerial experience in building and operating refineries. To be sure, it could learn but the company was still struggling to manage the upstream operations over which it had taken full control in 1976. It was partly for this reason that Petromin had initial responsibility for developing the domestically located export refineries. Petromin in fact had very little experience in anything and foreign partners were essential. Second, there was the obvious point that these were export refineries whose output was to be marketed abroad. Therefore, having foreign partners with an existing downstream marketing capability made a great deal of sense.

More recently, Saudi Aramco's downstream strategy has been linked into its wider international strategy as explained below. However, in domestic terms it has been simply to ensure that the kingdom has sufficient domestic refining capacity to meet domestic demand for oil products. This has been comfortably achieved. It also sees owned refinery capacity as providing security of demand for its crude oil exports and there is an informal target to create enough refinery capacity at home and abroad to process 50 percent of crude output (Al-Moneef 1998).

In November 2006, it was announced that Saudi Arabia's domestic refinery capacity would be increased from 1.9 million b/d to 3 million b/d by 2010. While some of this expansion would come from Saudi Aramco's refineries, there was also a stated intention to involve private sector investment.

4.2.1.6 Downstream - abroad
Downstream plans abroad have been at the center of Saudi Aramco's strategy for some considerable time. Part of the logic for this comes from the aftermath of the first oil shock of 1973 with its consequent access to revenues on a grand scale and ideas of a leading development sector outlined earlier. However, there were other reasons. There was what might be termed a cultural legacy. The Aramco partners had all been operationally vertically integrated IOCs working in many countries. Thus if Saudi Aramco was to be a serious player, it too had to follow suit. There was also the concept of locking in export markets. During the dark days of the defense of price between 1982 and 1985 there was a growing realization among the OPEC countries that they were competing with non-OPEC producers for market share and that they were losing since non-OPEC countries could simply shave prices to make their crude more attractive. As demand security became a growing issue, an obvious solution was to secure crude markets by owning the refineries. A particularly important experience in this regard for Saudi Arabia was in the early 1980s when the former Aramco partners refused to lift Saudi crude because of the relatively high government official sales prices. Memories of this event persuaded Ali Naimi and others within Saudi Aramco that they needed a wider, more diversified customer base and also needed to take greater control of crude marketing. This helped drive plans to expand the downstream.

Finally, there was a realization that operating abroad gave the company much greater freedom from interference by its own government. As many of the other case studies have shown, this was derived from ideas associated with principal–agent analysis. Thus
locating downstream activities abroad, especially using operational vertical integration, deepened the information asymmetries between principal (the controlling ministry) and agent (the NOC management). This allowed the NOC management to pursue extensive rent seeking. However, the relevance of this as a driver in the case of Saudi Aramco is not obvious. As this case study is indicating, the corporate culture within the company was such that there was a sense of responsibility and pride among the Saudi Aramco management as “guardians of the country’s patrimony.” While it is easy to be cynical about such grand statements, it would suggest that rent seeking was much less in Saudi Aramco than in other NOCs. However, providing hard evidence to support such a view is extremely difficult.20

Saudi Aramco began to develop its downstream operations abroad in 1988 by creating a joint venture – Star Enterprise. This allowed Saudi Aramco to acquire a 50 percent stake in Texaco’s three refineries at Delaware City, Louisiana and Port Arthur. However, the strategy was in many ways different from that of PDVSA or KPC.21 As already explained, the domestic refinery expansion in the 1970s had been done through the process of joint ventures with a large number of foreign companies. It was therefore no surprise that the same model was used when downstream assets were being developed. Furthermore, KPC’s experience buying poor assets made Saudi Aramco very wary of buying other companies’ “cast-offs” (see Chapter 8). Thus the process was developed at a much slower pace.22 A key reason for the joint venture approach was that Saudi Aramco, at least before the takeover of Samares in 1993, had no experience of selling oil products internationally. The experience and infrastructure of the foreign partners were essential for the commercial success of the ventures.

The move downstream abroad was also complicated because while Saudi Aramco was looking for commercial advantages, in particular to secure market outlets for its crude, the government of Saudi Arabia also had its own agendas in the field of foreign policy. A good example of how politics and commerce intermix is the Star Enterprise joint venture based upon Texaco’s refinery at Port Arthur cited above. Saudi Aramco, under instructions from its government, insisted on supplying the refinery with Saudi crude despite the fact that Texaco argued it would have been much better to have run Venezuelan crude through the refinery. The additional cost was born by Saudi Aramco because the Saudi government wanted to be a crude supplier into the United States to strengthen political links between the two countries.23

4.2.2 Gas

The willingness and ability to deliver natural gas domestically has been a major part of the development story in Saudi Arabia and the government has long taken a proactive approach with respect to gas. In 1975, the oil ministry decided that the extensive flaring of associated gas should cease. This for some time had been a bone of contention between the Aramco partners and the government given the poor economics of gathering and processing gas. However, the government saw the associated gas as an integral part of the country’s natural resource base and felt simply flaring it was inappropriate. To that end the master gas system (MGS) was planned and executed by Saudi Aramco.24 As well as supplying gas for Saudi Aramco’s own operations the MGS supplies fifty-four other companies including power and desalination plants plus twenty-one large petrochemicals plants, eighteen owned by SABIC and three owned by private sector interests.

However, it is clear that up to the late 1990s some parts of the government believed the company was not paying enough attention to gas (Marcel 2006). This view that gas was being neglected was to some extent reflected in the upstream opening process described above. It also explains the apparently greater emphasis on gas within Saudi Aramco in recent years. The MGS currently is undergoing further expansion to manage 9.3 billion cubic feet per day (bcfd) of gas and produce 7 bcfd of sales gas. This was in part to catch up but also designed to preempt opposition in Riyadh.

The role of gas as a domestic fuel is a controversial subject. The conventional wisdom argues that for an oil exporter it makes sense to replace domestic oil consumption with gas in order to free up oil for export, which has greater value for the country. However, for Saudi Arabia this is a doubtful argument. It assumes that there is some form of constraint upon the capacity to export crude that can be relieved by substituting gas for oil in domestic consumption. However, Saudi Arabia’s export constraint is not an inability to increase production. It is only related to the fact that if the kingdom exports more oil, it...
threatens the global pricing structure, which will reduce revenues. Thus the decision of what to burn domestically should revolve only around the cost of supplying the fuel. Gas tends to be more expensive than oil to produce and certainly to transport. Thus the benefits of using gas instead of oil are far from clear-cut.  

5 Saudi Aramco’s performance

To achieve the strategic objectives described above, the company must undertake and operate projects, which requires investment, construction, and operations. The company has been described as a “patient investor” (Marcel 2006, p. 73) and “in the game for the long term” (Marcel 2006, p. 162). Investment plans are drawn up within the context of the five-year rolling plan. The company uses a variable hurdle rate that any project must pass before it is then considered in greater detail. The hurdle rate tends to change with market conditions but is relatively high reflecting management’s conservative investment strategy. Generally the approach and methodologies used in the project appraisals are those used by any large IOC. However, the golden quadrant is always present as a consideration to allow inclusion of national mission elements in the decision process.

Unfortunately as already discussed at length, there is little public information available on the details of these processes. Thus details regarding how risk is regarded and managed, who makes the final decisions, etc., are simply not known. Based on my casual observations over the years, however, the impression is gained that the company operates on the basis of striving to achieve a consensus based on sound analysis both in terms of economics and engineering considerations. As for judging performance, as indicated earlier, great attention is paid internally to the use of benchmarking techniques to provide bases for comparison.

This section is an attempt to assess the performance of Saudi Aramco despite these problems. Performance is hard to measure, but the impressionistic conclusion advanced here is that Aramco’s performance is good when measured against its strategic objectives and its operational context in terms of capacity and production levels as determined by the government. This conclusion is based on its record on project delivery and its contribution to the “national mission.” What follows tries to give some justification for this assertion.

Typically, one would measure performance of an oil company by focusing on the size and return on capital employed, finding, development, and production costs; and many other typical corporate metrics used to assess the performance of any company (Stevens 2008c). However, these are difficult to muster and evaluate in the case of Saudi Aramco because as indicated the data is not available in the public domain. As is rare among NOCs, the shareholder (the Saudi government) has access to complete and high-quality data about the enterprise’s performance in terms of the overall finances. NOCs that become “states within a state” are usually opaque to all outsiders, including government owners. For Aramco, a measure of transparency exists within the government’s inner circle even while those outside of the government see an opaque operation.

The tension created by external opacity was evident when questions arose about the quality of Aramco’s legendary oil reserves. In 2005 Matt Simmons produced an article – subsequently a book (Simmons 2005b) – that argued that the Saudi reserves were grossly overstated. He also claimed that Ghawar, the biggest Saudi oil field that accounts for half the enterprise’s output, was being badly managed and faced steep declines in production. In response, Saudi Aramco gave a public presentation at the CSIS (Center for Strategic and International Studies) in Washington refuting Simmons’ claims and presenting more data than ever before explaining part of the basis of the reserve estimates. The debate continues to rumble on. In June 2008, the company claimed that the water cut in Ghawar (which is the fraction of produced liquid that is water, rather than oil, and one indicator of a field’s maturity) is 28 percent (and falling) compared with an industry norm of 80 percent (MEES 51:26). However, Simmons has seeded a tempest. And further doubts arose when Sadad Hussein, the former head of exploration and production in Saudi Aramco, publicly began to doubt some of the claims being made for possible capacity expansions. By implication, the enterprise was performing poorly.

The problem with that approach to assessing performance is that reserves are so large that particular reserve announcements do not necessarily have any bearing on what the firm can produce. Moreover, even looking at output is a poor measure of performance because production levels are political choices rooted in efforts by the government to manage the oil markets. From 1945 until the early 1970s, Saudi output rose steadily (Figure 5.6).
However, this steady growth hides important elements of the story. Up to 1960, Aramco's production to some extent was constrained by the joint venture system that dominated production from the Middle East (Blair 1976). This system was designed to manage the potential oversupply from the region by restricting output to what could be refined and resold reliably, which constrained the ability of the majors to increase capacity. In particular, the “average programme quantity” (APQ) system in Iran meant “the Aramco partners have been in a position to exert a downward influence on Iranian output” (Blair 1976, p. 105). Also, Aramco itself had a mechanism to penalize any partner wishing to produce above its equity share. During the 1960s, these control mechanisms began to fray around the edges as new players entered Eastern Hemisphere oil markets and as the majors themselves began to develop capacity outside of the Middle East and its control mechanisms. However, growth in global oil demand as a result of the “OECD economic miracle” disguised this erosion of control (Stevens 2008a).

Figure 5.6 shows Saudi Arabia's oil production in the context of global oil production. After the first oil shock of 1973–1974 a clear pattern emerges with Aramco's (and then Saudi Aramco's) production. In effect, Saudi Aramco becomes the swing producer and so global supply follows closely what Saudi Arabia decides to produce.

The function of the swing producer was to manage prices and in particular to defend particular prices. The decision to take up this role, and the way in which the role was played, was entirely a political decision with the oil ministry acting as the prime mover. After 1973–1974 and until 1978 Saudi acted as swing producer. This was a deliberate policy to manage OPEC but also because it could swing given the fall in oil demand following the first oil shock. The same story is true between 1982 and 1985. It was only in 1985 that, as described earlier, spare capacity became an explicit policy. Before then it had simply happened by accident. Saudi Aramco's role (apart from producing what was required) was twofold. The first was to provide the information necessary to allow the ministry to decide what would and what would not balance the market. The second was to maintain a cushion of spare capacity so that Saudi Arabia could reliably play this swing role under any circumstance. By August 1985 output had fallen to 2.34 million b/d (from 10.5 mbd in 1980) as the government tried to protect prices. As this policy emerged, it became increasingly difficult to measure Aramco's performance just by looking at output. The willingness of the Saudi government to take on this role of controller and stabilizer of the market is rooted in many obscure factors (Stevens 2008a). Fundamentally, no other country could play this role, and some semblance of order in the market – an order previously supplied by the Western majors who controlled access to oil users – was in the interests of the government and Saudi Aramco.

Given the difficulty of using standard metrics for performance, this study will adopt a different approach and explore two other metrics: performance against self-declared targets and contributions to Saudi state mission. The former offers a window on what the leaders of the enterprise think is feasible and achievable. The latter allows exploration of whether and how the enterprise meets the goals of its masters.

Self-declared (within Saudi Aramco) targets concern whether projects come in on time and on budget. In general the company prides itself on its ability to do precisely that and most of the projects certainly have come in on time. By this metric, Aramco has performed extremely well. Only in the period of high prices around 2008, when there were serious shortages in the supply of upstream services, has there been some slippage but this is in a context where such constraints have generally caused delays on projects everywhere. For example, in September 2008 the Khursaniyah field development came onstream after originally being scheduled to be ready for the
end of 2007 (MEES 51:36). It is however a huge project aimed at producing 500,000 b/d, 580 mcf/d of gas and 290,000 b/d of NGLs. The reason given for the delay was late delivery of equipment. In a similar vein it was announced in July 2008 that utility contracts had been awarded for the 900,000 b/d offshore Manifa project. It was expected that these would have been awarded at the start of 2008 but were delayed "at the request of contractors" amid growing concern about cost escalations (MEES 51:27). The project was supposed to come onstream in 2011 and the delays have prompted speculation that the project might be behind schedule, but Saudi Aramco has expressed confidence it will deliver according to plan although the field is not expected to be at capacity until 2012.\(^9\) In a presentation in June 2008, Amin Nasser, the senior VP for exploration and development, denied delays to the capacity expansion plans to 12.5 million b/d and claimed they would come in on schedule (MEES 51:26).\(^9\)

As for keeping to budget, the absence of financial data makes it impossible to assess whether this has been the case. In some projects, costs have probably been high because of the need for haste. A classic example was in 1995 when the company hurriedly developed the Shaybah fields with a capacity of 0.5 million b/d. The speed of this development, it was rumored, led to much higher costs than normal.\(^9\) However, it is not clear that cost control is the highest issue on the company's agenda. More important is getting a project done well and on time although cost issues can arise if prices are relatively low.

As for the Saudi state mission, this is central to Saudi Aramco's operations. Assessing the national mission of an NOC is difficult and controversial - in assessing the right missions for evaluation and in measuring performance (Stevens 2008e). Conventionally it can be defined using Albert Hirschman's approach of examining three kinds of "linkages": fiscal, forward, and backward (Hirschman 1981). Fiscal linkages refer to how much revenue the company generates for the government. We have already examined those linkages, which are massive.

Forward linkages refer to the provision of inputs (energy) for the rest of the economy together with the provision of skilled manpower and good business practices being fed into the rest of the economy. The oil sector is, not surprisingly, an active supplier of oil and gas. Oil and gas are priced for local consumption at long-run marginal production costs rather than international prices, explaining why final product prices in Saudi Arabia are far lower than the world price and why Aramco's refining division nonetheless posts a profit.\(^1\) Despite very low prices, there is no evidence of shortages (unlike in Iran, for example, where low pricing is not married with integrated control over supply chains and the much larger local population leads to much greater overconsumption; see Chapter 6). Indeed, Saudi Aramco's downstream strategy has entailed building surplus refining capacity; about one-third of its local refining is exported at world prices. There can be little doubt that in terms of supplying oil products to the domestic economy - a goal set by the Saudi government - Saudi Aramco has been a success (although given its very high production levels this has been an easy target to meet). Whether this is good public policy is another matter, since average cost pricing in a low-cost country leads to prices far below international levels although technically they are not subsidized. In the negotiations for Saudi Arabia's accession to the WTO, the government managed (amazingly) to persuade the WTO that Saudi Aramco was not actually a state-controlled enterprise but could be treated as a commercial entity. Therefore low feedstock prices based on actual long-run marginal cost rather than border prices were accepted as not being a subsidy. This decision by the WTO was crucial for Saudi Arabia's future role in international petrochemical markets.

A consequence of these low prices is that domestic energy consumption in the kingdom has grown extremely rapidly and energy intensities are extremely high. In 2009, for the first time, elements within the oil techno-structure have begun to suggest that domestic oil product prices should be moved closer to international prices to encourage more efficient usage.\(^1\)

In addition to forward linkages of energy, Saudi Aramco has also supplied skilled manpower to other parts of the Saudi economy. The most spectacular example was Operation Bultiste (mentioned above). It has also been important in spreading good modern business practices and governance to the rest of the economy. It is not surprising that the recent plans by King Abdullah to create a new university and a major energy "think tank" within the kingdom have been given to Saudi Aramco to execute. Quite simply it is regarded as the best managerial institution in the country, and when the Saudi government needs a vital project performed, it often turns to Saudi Aramco.

Backward linkages are the effects of the enterprise on supply chains that, in turn, can help to develop the rest of the economy. Aramco and
then Saudi Aramco have been central to the economic development of the Eastern Province and have always gone to considerable lengths to maximize the backward linkages to the rest of the economy to encourage the availability of local factor inputs. However, attempts to maximize local input have always been done on a commercial basis with no regulatory requirements. Efforts to increase local content have taken many forms. There has been a long history of Saudi Aramco creating joint ventures with private sector companies, teaching them skills, and then selling its shares to the private sector companies. In terms of purchasing, Saudi Aramco claims that in 2000, 86 percent of their purchases were from “Saudi factories or Saudi imports” and that the factories supplied more than $30 million of their purchases.\textsuperscript{112} Such data is released only sporadically and is generally scarce, so it is hard to assess just how Aramco has performed in deepening the company’s backward linkages.

The company has a “new business development” unit (NBD) whose function is to commercialize the intellectual properties emerging from the enterprise’s R&D efforts. In turn, NBD created a local enterprise development division (LEDD) to further encourage local suppliers. More recently, the company has been devising strategies to encourage local firms that are too small to bid on some of the mega-projects to form consortia. In 2005, two contracts for project management were awarded to two consortia based on local engineering companies. To be sure, there is a trade off in this strategy – of using local content on an economic basis while also containing costs. In recent years it has been suggested that Saudi Aramco is trying to “move away from spending” (Marcel 2006, p. 131) on general infrastructure. This is possibly because the company sees the potential of becoming too distracted from commercial operations, as the government desperately tries to encourage broader economic development in the kingdom.

Another area of backward linkages where there is growing concern is in the context of employing Saudi nationals. For many years the government of Saudi Arabia – like governments in nearly all oil-rich countries – has been pursuing a Saudization program in a desperate effort to find employment for the growing labor force in the face of awesome demographics. Based upon the Saudi Statistical Year Book 2006, 37 percent of the country’s population is under the age of 14 and this population bulge will be soon seeking employment. Saudi Aramco employs predominantly Saudis and over the years the number of expatriates has reduced significantly. In 2005, Saudi Aramco’s staff of 51,843 was 87 percent Saudi.\textsuperscript{113} In 1995 a staff of comparable size was 80 percent Saudi.\textsuperscript{114} Saudi Aramco has carried on the Aramco tradition and continues to develop extensive training programs for nationals.

The problem with success in Saudization is that the government increasingly sees the petroleum sector as a source of new jobs for the bulging population. Despite twenty years of government effort at Saudization, the national program has failed to keep up with the growing population. Moreover, fewer than 10 percent of employees in the Saudi private sector are nationals.\textsuperscript{115} This basic number puts growing pressure on the company to play a greater role in employing Saudi nationals, both directly and through possible investments in downstream activities. While the company welcomes the national mission – and the highly visible role of employment – it fears hiring unskilled workers that could dilute the managerial competence of the company. This problem is particularly serious for the sector since the capital-intensive nature of the industry severely restricts its ability to create durable and meaningful jobs.\textsuperscript{116} There is concern that pressure to increase employment of Saudis could undermine the effectiveness of the sector if pushed too hard, too quickly. Nonetheless, the pressure to create jobs does not abate, and if IOCs were ever allowed back in the country, they would face similar pressures: under the gas initiative, Saudi Aramco indicated that it would stipulate local employment quotas for IOCs. As is typical, the pressure for local employment extends not only to jobs but also contracts. It has been reported (MEES 51:46) that there is some resentment among Saudi industrialists who claim the company is reluctant to give work to local firms. While the official line with Saudi Aramco is that Saudi firms will get preference in contracts, this promise is generally honored only when those firms meet international standards. When Saudi Aramco’s current CEO, Khalid Al Falih, was senior VP for industrial relations, he developed a reputation for being extremely tough on maintaining specification standards on inputs. Nonetheless, the enterprise usually has some initiative under way to help expand the array of viable contractors in the country.\textsuperscript{117}
6 Conclusion and the future of Saudi Aramco

There are certain elements of context that are central to understanding the Saudi Aramco story contained in this chapter. The company was never designed to be the NOC for Saudi Arabia. The result was that the company, which emerged after the de facto takeover in 1976, came from a culture more aligned to an IOC than an NOC. This meant that it had in place clarity in goals, freedom and ability of managers to perform assigned tasks, and accountability for decision making together with internal transparency: all of the characteristics that are required if good governance is to be achieved (Lahn et al. 2007). It also meant there existed an overwhelming corporate culture of pride in the company, central to the Saudi Aramco story. Both factors made a major contribution to limiting the extent of rent seeking within the company that differentiates it from so many other NOCs.

Because of the extent of the “technological strangeness” prevalent in Saudi Arabia from the time of the early discoveries of oil, both Aramco as a private company and Saudi Aramco as an NOC were faced with a much greater role in terms of the “national mission” compared with many other oil-producing countries.

Successive kings and their governments protected the company from undue political interference in its day-to-day operations. This was especially true after it effectively became the NOC. It was also a crucial part of the story of effective technical and managerial competence, given that Saudi society was extremely hierarchical based on extensive networks of client-patron relationships. Without that insulation the company would have quickly fallen foul of internal political wrangling, seriously inhibiting its capacity to operate. Instead it was able to operate on an essentially technocratic basis with decisions being made on the basis of commercial, economic, and technical criteria.

Oil became a central plank in Saudi Arabia’s foreign policy during the 1960s and remained key to the pursuit of that policy. Given the kingdom’s huge reserves and producing capacity this inevitably meant that Saudi Aramco had to consider much wider issues than any other NOC. Its decisions would have huge influence on international oil markets, and international oil markets would create huge constraints on the corporation’s freedom of action.

Within this context, Saudi Aramco had three strategic objectives. It was the guardian of the country’s patrimony and therefore responsible for the optimal management of the kingdom’s hydrocarbon resources. It was the servant of the Saudi state. Finally, it had strong interests to protect and develop its central role in the country’s hydrocarbon sector. It is these three objectives that provide the criteria by which to judge the performance of the corporation.

A major problem with assessing Saudi Aramco’s performance is the almost complete absence of external transparency. While internal transparency within the corporation and between the corporation and the shareholder (i.e., the government) is good, the government has consistently refused to make public greater detail.118 This chapter has therefore struggled to measure performance in any detailed or consistent way. That said the overall conclusion is that Saudi Aramco has succeeded in achieving its three strategic objectives. Also, based on the view taken of its record on achieving projects on time, at an operational level it has also been effective.119

Of particular note in the story is the extent to which, over the years, Saudi Aramco has developed and nurtured a very high-quality labor force. It is this pool of human capital that has made the company stand out both within the kingdom and among many of its brother NOCs. At the moment, the company is coming under intense pressure to do more to help relieve the growing problems of youth unemployment within the kingdom. This pressure has two directions. One is simply to employ more nationals in what is essentially a capital-intensive rather than labor-intensive industry. The other is to do more to extend the “national mission” thereby increasing job opportunities in other sectors. There are two potential dangers here. One is that employing more within the company for the sake of employing more may well dilute the company’s managerial and technical excellence. The other is that putting excessive resources into pursuing the “national mission” will dilute managerial attention away from the core business of managing the country’s hydrocarbon resources.

As to the future of Saudi Aramco, this depends very much on what happens to the politics within the kingdom over the next few years. The real danger is that whoever controls the kingdom after Abdullah might allow Saudi domestic politics to increasingly intrude into the day-to-day operations of the company. If external rent seeking intrudes on the company it is difficult to see why a management that
has previously restrained itself from excessive rent seeking should not join in any feeding frenzy that may result.

Notes

1 Indeed, this case study faced two major problems in its preparation and writing. First Saudi Aramco is notorious for its lack of transparency to the external world. There are no published annual reports in any meaningful sense or accounts. There is an Annual Review that contains fairly anodyne information and other occasional documents, press releases, interviews in the trade press, etc. There are no data sources that offer consistent time series apart from a few rather obvious operational numbers. As will be cited throughout this case study, there is a very large body of literature on Saudi Aramco (notably Abir 1988; Nawwab et al. 1995; Obaid 2000; Marcel 2006; Jaffe and Elss 2007; Vitalis 2007; Hertog 2008), but this suffers from the same problem of a lack of data regarding the usual corporate metrics used to assess oil companies (Stevens 2008c). I draw from sources where they are available as well as my involvement with Aramco and then Saudi Aramco since 1969 providing consultancy, seminars, professional training, and other matters. The second problem is that Saudi Aramco is the central player in the oil sector of Saudi Arabia, which has a uniquely important role in world oil markets. As such it is a policy instrument of the Saudi government as it pursues its state interests. Because of Saudi Arabia’s very large proven reserves and exports, Saudi Arabia is above all a price maker and thus strategic decisions play a key role in the state of oil markets and the determination of oil prices.

2 Much of the history presented here has been taken from Longrigg (1961); Hirst (1966); Mikdashi et al. (1970); Stocking (1970); Stevens (1975, 2008a); Seymour (1980); Keating (2006). See also the references in note 1.

3 This term is used to describe a concession agreement signed between governments and the so-called “Seven Sisters” who together with the French company CFP became known in the literature of the 1950s and 1960s as “the Majors.” Most of the main old-style concession agreements were signed before the 1950s. The term is used to distinguish such agreements from joint ventures, production sharing agreements, and service agreements that came to dominate the oil upstream after the 1970s (Stevens 1975).

4 There was very strong competition between SOCAI and the other majors trying to secure access to exploration acreage following the end of World War I. This competition was further complicated because there was significant involvement by the British, French, and US governments.

5 It should be pointed out that similarly generous terms applied in other Middle Eastern countries at the time.

6 Interestingly, the government of Saudi Arabia published the text of the concession in the official newspaper Al-Qura a week after the king signed Royal Decree No. 1135 granting that concession. However, in a move that was to set important precedents that have dogged the company up to today in terms of information and transparency, SOCAI refused to make the text public in English (regarding it as commercially confidential). Indeed, in a US court case in 1947 it refused to provide details of the agreement despite the fact it had been published in Arabic fourteen years previously (Stocking 1970). American courts readily accepted that argument.

7 This was equivalent to eleven US cents per barrel.

8 Those fears were well founded, and the firm quickly shot to the top of producers. By the end of 1945, when CASOC’s operations were in full form, the company produced over 21 million barrels (57,000 b/d) loading thirty-eight tankers, nearly three times the total in 1944. By the end of 1949 production was up to 500,000 b/d (Nawwab et al. 1995).

9 The “As-Is” agreement of 1928 had created a pricing mechanism – the Gulf Plus Basing Point System – to manage unexpected changes in volume, but finds of this type were not envisioned when that agreement was crafted.

10 There is no hard evidence as to why the name was changed but given CASOC was about to negotiate with Exxon and Mobil both of which were offshoots of the Standard Oil Trust the change of name may well have been to try to distance the company from this connection.

11 See Chapter 11. The reason for Saudi Arabia’s being first to move on this issue in the region, according to Stocking (1970), was that “the king was impelled not so much by the poverty of his people as by his own and his royal family’s prodigious and conspicuous consumption. This had quickly adapted itself to expanding revenue” (page 145). However, other countries in the region followed rapidly to move to profit tax.

12 Tariki had become director general of petroleum and mineral resources in 1934, the precursor of the Saudi Ministry of Oil.

13 De jure, Iran and Kuwait were never “colonies.” However, de facto they were.

14 In May 1936 there were demonstrations in Dhahran demanding the phasing out of the American military base and the nationalization of Aramco. This was followed by a strike within Aramco in June. However, this “was quickly and brutally suppressed ... by the governor of the
Eastern Province” (Abir 1988). A royal decree then forbade strikes and demonstrations of any kind.

In Aramco this was referred to as the Saudi Arab Government (SAG).

There are differing views on this. For example Vitalis (2007) tells a very different story whereby the American parent companies created a “Jim Crow” system in the Dhahran oil camps. While the workers challenged this racial hierarchy in the 1950s and 1960s, they were suppressed by the Saudi state as indicated in footnote 14.

17 Casual stories told to me in the late 1960s suggest that the management of Aramco was more culturally aware than its European (certainly British) counterparts in the rest of the region. They went to greater lengths to accommodate Arab cultural mores and attitudes. A good example was the introduction of what became known as the “son of a bitch regulation” within Aramco in the 1950s. This forbade Americans using the term to Saudis. In US culture such a label is not a big deal and can often be used humorously but in Arab culture calling someone an “Ibn Sharmutta” is extremely offensive.

Perhaps the most famous example is the current oil minister, Ali Naimi. He joined Aramco as little more than a tea boy in 1947 aged 12. His abilities were quickly spotted and he was put through the education process. I have been told that when Naimi was informed he was to be sent to the US for university training, he was asked what he would like to study. He apparently replied, “What degree does the current CEO of Aramco have?” When told he was a geologist, Naimi replied that that is what he wanted to study. He eventually became president and CEO of Saudi Aramco in 1983.

These included a number of US independents ranging from Occidental, Phillips, and Amoco and some of the NOCs of the importing countries such as Eni. It also included a number of NOCs from producers who by virtue of their production sharing agreements and joint ventures had become crude sellers as part of the fiscal terms of the agreements (Stevens 1975).

The idea was that this “general agreement” would set the broad terms of “participation.” It was then left to the individual signatory countries to negotiate with their own IOCs to finalize the specifics and the details.

For a variety of historical reasons competition between the ruling elites in Saudi Arabia and Kuwait was particularly intense. King Faisal once remarked that all the problems of the world stemmed from the fact there were three super-powers “the United States, the Soviet Union, and Kuwait”

22 In the event only Abu Dhabi managed to resist the pressure for full nationalization and stopped at 60 percent equity because it “lacked the manpower and technology to be able to dispense with the companies” (Stevens 1975, p. 148).

23 In March 1962, the new king appointed Ahmed Zaki Yamani as the minister of petroleum and mineral affairs with Hisham Nazer as his deputy. Previously this had been the directorate of petroleum and mineral affairs with a director general who had been Abdullah Tariki but had been upgraded to a minister in 1960. In November 1962 Petromin was created and Abdullah Taher, one of Yamani’s protégés, was appointed as governor. It has been suggested that Taher was disappointed with the appointment since he had wanted Hisham Nazer’s job. This was to lead to significant rivalry between the two, which was important for the future development of the sector (Herrog 2008).

24 In reality, before the late 1990s, the SPC was not particularly important in the control of the oil sector. The author has been told that the board minutes of Saudi Aramco would be translated into Arabic and sent to the SPC but in most years there was no return correspondence.

25 This was a government-created organization intended to manage the new industrial cities of Yanbu and Jubail.

Personalties surely played important roles in this shake-up and the eclipse of Petromin. It was alleged that Fahd regarded Yamani, who had always been seen as “Faisal's man,” as too powerful. Yamani had been one of the architects of Petromin, and his deputy was named Petromin's president. Under Faisal these were valuable political assets; under Khalid and Fahd they were liabilities.

26 Meanwhile the antagonism between Taher and Nazer intensified and many of the senior Saudis in Aramco “evolved to be the most committed anti-Petromin group in the Kingdom” (Herrog 2008, p. 19). In July 1978, Taher was given ministerial status. However, in 1986, Nazer effectively became Taher's boss and in December he was sacked.

27 In fact various conversations with former Aramco partners suggest that since 1976, they had treated the company as a wholly owned Saudi company.

28 In 1996 Aramco also got full control over Lubref and Petrolube. In 1997, Petromin's mineral projects were given to a new government-owned mining company MAADEN which in 2007 sold 30 percent of its shares to the public.

29 In fact there are three dimensions to the golden quadrant with the third being the supply of international markets.

30 To be fair, such an objective is central to the objectives of most ruling elites in most countries. Also it is not necessarily as cynical as it may sound at first sight. It is a fundamental assumption in the "economic theory of politics" that politicians seek to maximize power. While this
has attracted debate and discussion, it is a viable working assumption. However, this does not preclude the possibility that the politicians seek power to improve the lot of their people. It is interesting to consider whether this is a desire for its own sake because it is a "good thing" or simply to cling on to power. It is also interesting to consider whether the motive makes any difference to the outcome?

32 Among other things, this has created a positive cottage-industry, inventing conspiracy theories regarding the relationship between the Al Saud and various US administrations.

33 Saudi Arabia was a state created by military conquest between the taking of Riyadh in 1902 and the destruction of the Ikhwan in 1929. The Al Saud rule by the consent of the population as represented by the various tribes, religious leaders, and other interest groups. Even the most cursory reading of the history of the kingdom shows just how important was (and is) this issue of legitimacy.

34 It is interesting to note that even today, if the king has "pet projects" that he wants to see emerging, it is often Saudi Aramco that is given the task of creating and managing the project. A good example is the recent development of the new technical university KAUST at Thuwal near Jiddah and the creation of an energy think tank (KAPSARC) described below.

35 The ministry was also responsible for international relations in the context of the oil sector, most obviously within OPEC.

36 Clearly, such a system would feed those in the Ministry of Finance who believe in principal-agent analysis and see the oil ministry as having been "captured" by the NOC allowing extensive rent seeking.

37 However, it is interesting to note that often when questions regarding key policy issues are asked of Saudi Aramco executives, they are referred to the ministry. However, this is almost certainly related to their reluctance to enter what are essentially political discussions (Marcel 2006).

38 There is an extensive discussion of these changes in the Gulf States Newsletter Volume 32 Issue 835, September 1, 2008.

39 Each senior member of the family tends to have his own "oil experts" to provide advice.

40 The 2000 reform set SCPMA's official responsibilities as follows: 1) endorsing the company's five-year plan including its program to produce crude oil and its program for exploration for new reserves of hydrocarbon materials and developing them; 2) endorsing the company's five-year program for capital future investments; 3) appointing the company's chairman upon a nomination by the board of directors; 4) appointing an auditor and fixing his financial compensations; 5) reviewing the auditor's report and endorsing the company's budget and profit and loss accounts; 6) accrediting the annual report of the board of directors and the board of directors for the year in question; 7) deciding whether to increase, decrease the capital of the company, or allow others to contribute in it; 8) fixing the salaries of the chairman and members of the board of directors; and 9) appropriating any increase in the net value of the rights and assets of the company either to increase its capital or transfer it to the company's reserves.

41 An offshoot has been created to regulate the gas opening described below.

42 What follows is taken directly from ESMAP (2007), which was written by the author in 2006.

43 Unfortunately for those studying the company from outside, the results of these benchmarking exercises remain within the company. This of course is normal corporate practice but it is not clear to what extent they are disseminated within the company itself.

44 It is interesting to speculate how far these ministers reveal the details of Saudi Aramco's finances within their own ministries.

45 Before the service company cost escalation that has occurred since around 2002–2003, this was the average number used by Saudi Aramco as the long-run average cost of production of crude under normal circumstances.

46 Of course, even on capacity levels the Saudi Aramco corporate planners have a significant input.

48 Saudi Aramco takes its operating costs "after the receipt of royalties but before sending dividends" (Marcel 2006, p. 140).

49 For crude oil, until the recent rise in costs as a result of service industry constraints and the higher cost of steel this was set at $2 per barrel. This very low cost is of course the result of the large prolific fields with which Saudi Arabia has been blessed and as with other NOCs cannot be viewed necessarily as a reflection of the company's performance.

50 This might reduce the incentive to cut operating costs but this neglects the very strong corporate culture within Saudi Aramco of keeping costs low. For example, the argument has been made (Marcel 2006) that the management wants to minimize costs because it feels this helps retain the trust of the government. It is interesting to observe that the attempted opening of the kingdom's upstream to IOCs in 1998 caused huge resentment within Saudi Aramco precisely because it felt it was effectively a vote of no confidence in the management.
51 In 1977–1978 there was a corruption scandal in Aramco over the gathering project. However, such events were seen as an exception (Hertog 2008, p. 21).

52 Transparency International on its website lists Saudi Arabia as 80 out of 180 on its Corruption Perception Index 2008 compared with 46 out of 133 in 2003. In its Bribe Payments Index Saudi is 22 out of 30 for 2006. See also Lacey (1981); Abir (1988).

53 This arises from the normal practice in national income accounting of including oil revenues as part of national income. This in reality is quite misleading given that oil is a depletable resource. Revenue from selling oil is not income. It is simply a reshuffling of the nation’s asset portfolio from oil below ground to dollars above ground (Stevens and Mitchell 2008).

54 In Arabic, Yamamah simply means dove, which is an interesting name for a deal involving sophisticated warplanes!

55 For details of the project and the workshops and papers that underlie the document, see www.chathamhouse.org.uk/research/eedp/current_projects/good_governance/.

56 This statement of course begs an important question as to what constitutes a “secretive” society versus a “transparent” one and how this can be measured. Clearly Transparency International tends to link a lack of transparency to higher levels of corruption and does attempt to measure this – see note 52. Clearly there is a danger of stereotyping and accusations of prejudice. Ultimately such views are subjective and lack scientific rigor. However, this does not necessarily invalidate such views.

57 He joined Saudi Aramco in 1979 and so is the first CEO of the generation that joined the company after the takeover by the government.

58 These employees used to be described as “low-motivated Saudi employees” (LMSEs). It still apparently remains a problem. In particular, following massive spending on education there is an overhang in qualified but low-performing engineers. It is compounded because there is pressure to advance all members of a “class” i.e., those who joined the company at the same time. However, this inevitably results in a blockage because of the natural reduction in openings as one moves up the ladder. The losers in such a process tend to blame their lack of progress on poor connections and lose motivation. The result has been an expansion of jobs for mid-level managers and excessive staffing in many business lines.

59 Interestingly many of this new generation were actually children of former Aramco employees.

60 The Middle East Economic Survey (MEES) is cited throughout this report. For each citation, the volume and issue number are given.

61 An in-company joke suggests that the worst job in Saudi Aramco is being Ms. Falih’s personal assistant!

62 There is however an undoubted glass ceiling for women within the company although to be fair this is very common in most countries. However, there has also been, at least in the past, a glass ceiling for Shias reflecting the anti-Shia feeling that is a key characteristic of Wahhabi Saudi society. This may be changing and under Falih a Shia was promoted to a senior vice president position.

63 Experience has taught me that generalizations about national culture can be an extremely dangerous pastime. Nonetheless some comments are needed to provide a view of context. See also note 56 for comments on this issue.

64 To be fair, this trait is also true of large corporations more generally.

65 Its broader objectives are encapsulated in Corporate Values, which is a list of the corporation’s attitudes and resembles the corporate culture of an IOC. An illustrative list taken from the corporate website is as follows: “We pursue excellence in everything we do. We encourage continuous learning and strive to develop our people to their highest potential. We strive for fairness and adhere to the highest ethical standards. We support each other and work together to achieve our business objectives successfully. We strive to maintain the highest levels of safety, security, health, and environmental standards. We are responsive to the expectations of the government and our customers. We place authority where responsibility lies. We are accountable for our actions. We support our communities and serve as a role model for others.”

66 However, Saudi Aramco remains very dependent on the oil service companies; it’s a relationship that goes back to the 1950s and 1960s.

67 Other centers include the Research and Development Center inaugurated early in 2001 and charged with providing corporate-wide research. While it focuses on upstream research (reservoir - production) and thus duplicates EXPEC’s activities, it also covers downstream research (gas plants - refineries), material sciences, and environmental research. Technical support and troubleshooting are also provided. In addition there are advanced laboratory services to provide company-wide advanced analytical support to proponents such as exploration, producing, manufacturing, engineering, and operations services, and area laboratories. It carries out research and program coordination with academic institutions both in-kingdom and out-of-kingdom. It also holds an annual technical exchange meeting and sponsors membership in scientific societies. At full strength some 400 technologists and scientists are employed. In June 2009 it
was given the ISO 29001 standard covering basic activities in R&D
in the oil industry, the first center in the Middle East to receive this
accolade.

68 This view is controversial because it implies, based upon principal-
agent analysis, that the management may be more interested in its own
positions than necessarily what is good for the kingdom.

69 This goes some way to explain why Matt Simmons’ accusations of mis-
management of Ghawar provoked an unheard-of public response by
Saudi Aramco to refute the claims.

70 It is important to be careful when comparing recovery factors since they
are very dependent on the geology, which is a gift of nature and cannot
necessarily be assumed to be the result of good oil field management.

71 As with so much of Saudi Aramco’s operations this assertion is based
upon hearsay. The only data available (OAPEC, various years) suggest
that seismic activity between 1999 and 2003 increased from 60 crew/
months to 120 in 2002 falling to 108 in 2003 while exploration and
development wells completed rose steadily from 224 in 1999 to 290 in
2003. The company claims in its website a “60 percent success rate on
oil and gas wells.” However, the same source gives proven oil reserves
constant at 259 billion barrels from 2003 to 2007.

72 It has been suggested that these figures came out of a General Accounting
Office study in the late 1970s and were never seen within the kingdom
as serious targets.

73 The background to these discussions over capacity levels can be found

74 The objective set in September 2006 was to increase crude producing
capacity from 11.3 million b/d to 12.5 million b/d by 2009 with the
possibility of a further 0.9 million b/d of Arab heavy from the Manifa
field by 2011 to augment capacity. Up to 2009, the increment was to be
2.35 million b/d from 7 fields of which 1.5 would be net additions, pre-
dominantly of lighter crude. As already mentioned, underlying these
targets there is an explicit objective to protect the fields and maxi-
mize recovery rates. In July 2008, it was announced (MEES 51:30)
that Saudi Aramco’s plans for 2009–2013 were to double develop-
ment drilling expenditure to $22 billion compared with the plans for
2008–2012. This has been driven by the desire to increase the booked
reserves in a number of operations including Manifa and Karan but
also by the increase in well costs reflecting a general increase in glo-
bal costs. The 2009–2013 budget also shows a $1 billion increase in
exploration expenditure to $4 billion. Finally, the maintain produc-
tion potential well work-over expenditure is to increase by $1.5 billion
to $6 billion.

75 This also included 300,000 b/d from the Neutral Zone.

76 In October 2009 Saudi Aramco announced that it was dropping WTI
(West Texas Intermediate) as the basing point and using instead a com-
posite crude price that better reflected the quality of export crude from
Saudi Arabia. The reason was that in recent years, WTI had become
increasingly disconnected from international oil prices.

77 This system leads to what has become called the Asian premium. This is
the observed fact that crude prices in Asia regularly exceed those in
the Atlantic Basin. The Asian Premium exists because Saudi Arabia
sets the formula prices for Asia at a higher level than for the United
States or Europe. It is allowed to continue because the destination
clauses prevent arbitrage of Saudi crude between the Atlantic Basin
and Asia.

78 Somewhat belatedly, KPC has also begun to realize the wisdom of this
view (Stevens 2008b).

79 Since 1945 the IOCs had chosen to expand their refinery capacity on
the markets in Europe and Japan. Prior to World War II, refineries for
the most part had been located on the oil fields (Stevens 2000).

80 Examples from history that were widely quoted at the time were tex-
tiles for Britain in the eighteenth century and railroads for the United
States in the nineteenth century.

81 At this time (1973–1974) I was teaching at the American University of
Beirut and in this period all of the debate in the region among Arab
economists was around these issues. I attended a lecture by a prominent
oil minister (not Zaki Yamani!) who actually advocated building lots of
oil refineries for when the oil ran out.

82 Three export refineries resulted, all joint ventures: Rabigh Refinery
with a capacity of 325,000 b/d was a joint venture with the Latsis-
owned Greek company Petrolia, although in 1995 Saudi Aramco
became the sole owner; Jubail Refinery with a capacity of 300,000
b/d with Shell; and Yanbu Refinery with a capacity of 320,000 b/d
with Mobil.

83 In the mid 1940s, Aramco had built a 50,000 b/d refinery at Ras
Tanura. By 1947 it had been expanded to 100,000 b/d and in the early
1970s to 500,000 b/d (Navwab et al. 1995).

84 The author believes that a major reason for Yamani’s ideas for a gradu-
al takeover of the downstream industry was because he realized that there was a danger of stretching the management capabili-
ties of nationals over operations too quickly.

85 Arabian Industrial Development Corporation (NAMA) submitted a bid
to build a privately owned 400,000 b/d refinery at Jizan in partnership
with Petronas. NAMA is a private consortium of some 300 Saudis and
other GCC nationals created to invest in petrochemicals in which the Saudi Arabian Basic Industries Corporation (SABIC) has a 10 percent stake. In addition two newly planned refineries to process the heavy sour crude from the 900,000 b/d Manifa project have been announced. The one at Yanbu with ConocoPhillips for a 400,000 b/d plant is in question with rumors that cost escalation (currently standing at $13 billion) has killed it (MEES 51:29). It was announced on November 6, 2008, that the bidding process for the project was postponed. The one at Jubail is with Total. This is a $13 billion project due onstream at the end of 2012. Of the project costs, 25 percent is to be financed by an IPO for Saudi nationals. Both projects were on a lump sum turnkey basis. There are also plans to upgrade the (now) 400,000 b/d Samrref plant at Yanbu, which is now a joint venture with ExxonMobil following Exxon's merger with Mobil.

86 The author has been challenged on this assertion by one source, who argued that the decision to move downstream abroad was taken by the government and had little support among senior Saudi Aramco management.

87 This was when OPEC began its struggle as a cartel to defend price by cutting back production. This proved painful. Since governments were losing revenue as prices fell and volumes fell.

88 This argument became especially powerful for PDVSA and KPC, who were the first to develop a downstream capability abroad because both were producing heavy sour crudes, which given required refinery configurations were especially difficult to sell.

89 It was a time when government official sales prices were consistently out of line with actual spot prices in the market. This refusal to lift was particularly annoying to the Saudis since the same companies had been making significant profits by virtue of the “Aramco advantage” during the second oil shock triggered by the events in Iran during 1978–1979. It rather brought home to the Saudis in quite a brutal way that there is no such thing as sentiment or indeed customer loyalty in business unless there is commercial advantage to be had.

90 Certainly from private conversations, within the Ministry of Finance (which could be regarded as the key “principal” to Saudi Aramco) there is a suspicion that the company does indulge in rent-seeking behavior. This explains as indicated above why the finance ministry strongly supported Abdallah’s proposed opening of the upstream in 1998. It saw this as a mechanism to provide more accurate benchmarking by which to assess Saudi Aramco’s performance.

91 Van der Linde (2000) argued that these two companies and Saudi Aramco vertically integrated abroad “with the objective of guaranteeing markets and long-term economic rents” (p. 79). However, this neglects the principal-agent motivation for the decision.

92 A good example is the attempted joint venture refinery with China. Negotiations with the Chinese began in mid 1994 but stalled over two issues. One was their insistence that at least 70 percent of the output should be exported, which would compete directly with Saudi Aramco’s own export refineries. The other was the huge social and corporate spending required by the Chinese on non-core refining activities for the employees. However, eventually agreements began to emerge and in mid 2003 work started on the $3.5bn Fujian refining/ethylene project in Quanzhou, a project jointly supported by Saudi Aramco and ExxonMobil. The refinery expansion and upgrade will allow the plant to handle Saudi crude and was due for completion in late 2008 (MEES 48:29). However, talks are still under way between with China Petroleum and Chemical Corp (Sinopec) on a proposed $1.2bn refinery near the city of Qingdao in Shandong province.

93 Despite the view of very close links between the two countries in terms of oil, oil imports from Saudi Arabia into the United States have always been relatively minor. According to the US EIA in 1987 only around 9 percent of total US imports came from Saudi Arabia. By 2005 this had risen to some 12 percent.

94 This system gathered the associated wet gas, stripped out the liquids (which are particularly valuable and sold in markets that work in tandem with the crude oil market), and then delivered the dry gas to consumers. The MGS began full-scale operations in 1980. In 1984, the plants were revamped to allow them to process non-associated gas. In 1996, the MGS capacity was increased and in 2000 gas supplies were provided to Riyadh for the first time. At this point the system had the capacity to process 7.5 billion standard cubic feet per day (bcfd) producing 5.8 bcfd of sales gas and processing 1.1 million b/d of natural gas liquids.

95 Against this argument there is the argument that into the future, if Saudi production is constrained and reaches some sort of technical plateau, then domestic oil consumption will eat into the oil surplus available for export (Mitchell and Stevens 2008).

96 To be fair to Saudi Aramco this is also true of a great many other NOCs (and IOC’s). However, what is frustrating for the researcher is that unlike many NOCs, in the case of Saudi Aramco, the detail is available. It is just that the government chooses not to put the information into the public domain.

97 It might be argued that this is the same for any company where the ultimate decision comes from “the shareholder” where the identity of that entity is uncertain.
The Saudi Aramco financial system is an extremely efficient and complex system with great internal transparency and accountability. It is a system of which any large IOC would be proud. The explanation for this is that it created the system in the first place when the company was owned and controlled by the Aramco partners. That system was continued after nationalization and developed as accounting systems, both hardware and software, improved. The data (financial and operational) is collected and audited internally. The usual large international accountancy firms then audit the financial data externally. An annual report and accounts are prepared, as is typical for listed companies. However, as already indicated, the key difference is that there is only one shareholder – the government of Saudi Arabia – and it chooses not to make the report public.

This still raises a key question in the context of principal–agent analysis as to the ability of the government to be able to interpret the data.

This was the arrangement whereby each year the partners within the Iranian Consortium would decide how much oil would be produced and how that production would be allocated between them.

Lifting above that warranted by equity share meant that their dividends from Aramco declined (Blair 1976).

Between 1958 and 1972, the Iraq Petroleum Company (IPC) was the swing producer with the majors who owned the IPC, using disputes with the Iraqi government to reduce Iraqi output and then “conceding” points to the government to increase supply (Stevens 2008a).

This strategic decision came out of the turmoil within the kingdom in 1985 described earlier. Since OPEC had tried to introduce pro-ratioring via a quota system in March 1982, the system had suffered from the classic problem of cheating but also from error. Under that system, OPEC estimated global demand and the volume of non-OPEC supply; the difference was the “call on OPEC,” which was then divided between the members by means of their quota. The problem was that the underlying data on supply and demand was terrible, which meant that the “call on OPEC” was at best ill-informed guesswork. However, overestimating the “call” was convenient because it eased the persistent squabbling over quotas, and thus there was a noticeable tendency for OPEC to overproduce. Along with persistent cheating, overproduction threatened a price structure that was already showing signs of weakness. Saudi Arabia therefore took upon itself to absorb this overproduction by reducing its own production.

This is an average estimated from six trade press sources.

This steep drop in output reflected two sources of pressure on the government. First, it was apparent to everyone in the kingdom that falling production meant falling revenues, which, in turn, meant a collapse in spending on projects. That outcome was catastrophic for their incomes, which hinged on “commissions” from the allocation of such projects. Second, the oil techno-structure, which included both the ministry and elements within Saudi Aramco, argued the policy of withholding supplies to maintain the high prices that had prevailed after the Iranian revolution was misplaced. High prices destroyed demand by making oil uncompetitive with rival fuels and by encouraging users to become too efficient. Given the kingdom’s huge reserves, a lower (and stable) price was preferable to encourage energy consumers to move back to oil. Ultimately, the policy was changed in the summer of 1985. Saudi Arabia would no longer act as the “swing” producer. It would produce to quota and it also introduced netback pricing in place of government-administered prices. A key part of this new strategy was to maintain a cushion of spare capacity to ensure that in the event of outages elsewhere, Saudi production could fill the gap thereby limiting subsequent price spikes. It was hoped this promised stability would give confidence to energy consumers to move back to oil. This has remained a central plank of Saudi oil policy ever since albeit without netback pricing, and as will be developed below since 2004 Saudi Aramco has been working extremely hard to restore a cushion of around 2 million b/d. Although the carrying of spare capacity is a political decision at the highest level, it also makes sense from a commercial standpoint, as Saudi Aramco management will admit privately. Thus when there is an international outage and Saudi increases crude sales, it is selling at very much higher prices. A business case for the strategy of spare capacity can easily be made.

Much of what follows comes from ESMAP (2007, chapter 4.2).

This links to downstream plans. The Manifa crude is heavy and sour and Saudi Aramco was planning two 400,000 b/d export refineries in Yanbu and Jubail explicitly to handle this crude.

The increments are 250,000 b/d additional to Shaybah by December 2008; 100,000 b/d Arab Super Light Nuayym project due in 2009; 1.2 million b/d from Khurais due in June 2009 and Manifa.

The reason for the speed of development is an interesting story, albeit controversial, reflecting issues related to “national missions” to be discussed below. In June 1995, the Middle East Economic Survey published the secret 1974 agreement that settled the border dispute between Saudi Arabia and the UAE in which Sheikh Zayed ceded to Saudi Arabia the Shaybah field. This publication led to a considerable outcry in Abu Dhabi and there was a fear that once Sheikh Zayed died, his successors would raise the issue of ownership of the reserves. Given “possession is nine-tenths of the law” the strategy appeared to be to develop the field (at any cost))
before Sheikh Zayed died. Against this rather exciting and exotic story it has been suggested to me that the plans to develop Shaybah were actually begun in the late 1980s, at a time when there was low upstream investment generally, which resulted in very low rates for oil field services.

110 In 2006, OPEC reported Saudi domestic prices at 16 to 20 cents per liter for premium gasoline, 9.9 cents per liter for gas, oil, and diesel, and 9.3 cents per liter for jet fuel. These are significantly below the domestic prices charged in Kuwait.

111 In a paper presented to a meeting of OAPEC on March 28, 2009, Ibrahim Al Muhanna, one of the senior advisors to Minister Naimi, explicitly suggests this as a future option. (Reported by Kate Dourian of Platts on March 30, 2009.)

112 To put this percentage into perspective, a number of countries including Nigeria, Iran, and Libya all aspire to having 60 percent local content and in most cases this number is regarded in the industry as hopelessly unrealistic.

113 It seems likely that the company’s policy is not to strive for 100 percent Saudi employees.

114 Interestingly, in 1972 of the 10,353 workforce, 8,630 were Saudi nationals: 83 percent. Thus between then and 1995 the Saudi component actually fell.

115 The reasons for the failure are many and varied. The Saudi education system, for the most part, fails to equip student for work in a modern economy. Once hired, Saudi nationals are expensive, often have negative attitudes to certain types of jobs, and are difficult to get rid of. Finally, expatriate workers from the Asian subcontinent are plentiful, productive, cheap, and very easy to get rid of.

116 For example, MEES has reported that the PetroRabigh joint venture conversion of the refinery into a fully integrated petrochemical complex will generate only 1,400 direct jobs, although it was claimed that three times this number would also be created indirectly in related “industrial, maintenance and support activities.” The total cost of the project is estimated at $9.8 billion, reflecting the high capital intensity of the petroleum sector.

117 In 2006, the Ministry of Oil developed the “Saudi industrial cluster strategy” to create secondary industries around a refining-petrochemical hub in order to create jobs. This was as part of a general industrial cluster strategy. Five clusters have been selected for development and will be initiated through 2006–2011. These include automotive; construction; metals processing; plastic packaging; and consumer appliances. The cluster strategy was adopted as a national program under the auspices of the Ministry of Commerce.