

Chapter 4

The Industrial Studies and Development Centre

First Steps

In July 1968, Abdulaziz Al-Zamil returned to Saudi Arabia. He had been abroad for eight years to further his education and was already twenty-six years old. Confident he would soon establish himself, he took steps to find a wife. He asked his sisters to identify a suitable girl. “From certain candidates, I arranged to see and select one.”

Soon, he was also in receipt of job offers from some of Saudi Arabia’s most prestigious private- and public-sector organizations. Abdelaziz Al-Gwaiz, an older peer who later became his close colleague, describes the job market:

There was strong competition to get anybody who had a college degree. There was competition even for high school graduates, from companies and from ministries. Some had a strange method to hold on to a candidate. When you applied and they accepted you, they insisted on keeping your diploma so you couldn’t go and apply somewhere else.

Any college graduate could immediately find a job. “You could pick and choose,” recalls Al-Zamil, “because in certain disciplines there were very few graduates. There was such a need that you could get four or five offers.”

A Saudi with a U.S. master’s degree in industrial engineering was much in demand. However, according to Al-Zamil, there was one important limitation:

I knew that if you had received a government scholarship, the government had the first right to hire you. If the government wanted you, you had to serve for a certain number of years. In any case, when I came back from California, I wanted to work for the state. Government jobs were desirable because they offered security and good salaries.

The Ministry of Commerce and Industry oversaw a newly established Industrial Studies and Development Centre, later known as the Saudi Consulting House. This was a joint venture between the Saudi government and the United Nations Industrial Development Organization (UNIDO). Saudi Arabia had few industries, as Al-Zamil explains.

Besides the petrol sector, if we disregard traditional handcrafts, the first industries were those producing bar soap and laundry detergent. Making plastic products followed, but it was on a modest scale. In Riyadh, there were also some factories manufacturing sleeping mats and some wood-crafting operations.

The Centre was set up in the mid-1960s when Abed Al-Sheikh was minister for commerce and industry; he served as its first chairman. Its association with UNIDO gave it a mandate “to adopt its own rules and regulations.” It would be an independent organization, with its own policies and personnel. The Centre, Al-Zamil explains, was “the first serious effort by the Kingdom to stimulate industrial development and to carry out studies to encourage investors to go into the industrial sector.”

The purpose of the Centre was to discover how industries had developed in other countries and work out what we could do. For industry to develop, people had to be aware of what was needed. That meant the Centre had to carry out studies on markets, customer needs, imports, and so forth, and publish our findings so as to inform people.

Many of the Saudis coming back from the States with economics or engineering degrees joined this Centre. The Centre competed with the Management Centre for recruits. It conducted industrial research in the country and decided on needed projects. It had a crucial role. Its golden age was when it was a pure research facility.

Investors needed information about the sectors they wanted to operate in. The Centre did the research and provided answers. In the beginning, this was a free service; then the Centre started charging a symbolic fee, very small amounts of money for certain projects.

Al-Zamil joined the technical department of the Centre in the fall of 1968, soon after his return from the United States. He was in a division that assisted factories in maintaining their machinery and setting up training programs. He also prepared feasibility studies for the business community, including data about potential investments for small private businesses. “Mostly we were dealing with people who were either traders or in real estate; these were people who wanted to be in manufacturing but who did not know the cost of

machines or how to treat depreciation. They had to understand the feasibility of projects.”

He next moved to a division supervised by Jameel Abdullah Al-Jishi, who had returned from the United States slightly earlier than Al-Zamil, also with a master’s degree in industrial engineering. Al-Jishi ran a program to establish industrial estates in Jeddah, Riyadh, and Dammam, with the aim of accommodating small and medium-sized manufacturing industries. Al-Zamil soon found himself on site in Riyadh:

I was observing construction and seeing some of the factories move in. We developed an industrial estate: we set up the specifications, guidelines, and rules and implemented them; we built estates and encouraged industry to locate there and to follow our guidelines. At first, it was difficult to convince investors to follow specifications and safety rules—to do the right thing. It was quite challenging.

The UNIDO Fellowship

A few months after he returned home, Al-Zamil was awarded a UNIDO fellowship, to further his understanding of industrial development. The fellowship began in January 1969 and lasted for nine months. The aim was to study “similar cases”—albeit more advanced—in other countries. He remembers, “The United Nations wanted a Saudi to participate in the program in India, along with individuals from more than twenty other countries. I was selected. This was followed by programs designed for me by UNIDO in the Netherlands, the U.K., and Ireland.”

In India, he spent six weeks studying in Hyderabad at the SIET (Small Industry Extension Training) Institute, which organized programs for international students. Then came four weeks visiting sites in Bangalore, Bombay, Madras, and Delhi. Al-Zamil recalls, “It was eye opening to see the early experiences of India. When I think of industry, I think of operations spread out over a huge area, but in Bombay we found an industrial estate that was just a ten-story building.”

The trip culminated in a meeting with India's minister of industry. Al-Zamil "was chosen to give a speech on behalf of the UNIDO fellows. The Saudi ambassador was present. He was happy to see a Saudi chosen to speak in the graduating ceremony on behalf of all the different countries."

Al-Zamil then went to the Netherlands to do fieldwork at the Delft Institute. In July, he traveled to the United Kingdom, where he studied in a government-led program that addressed the loss of heavy industry in northern England and Wales, visiting Newcastle and Cardiff. Al-Zamil remembers it as a gritty, urban experience, very different from the time he had spent previously in rural Wiltshire and in affluent Tunbridge Wells.

They had cities in the north of England called "developing areas." These places were plagued with poverty and unemployment because most of the labor force had worked in coal mining or shipbuilding, industries that were dying. To encourage growth in those areas, England created industrial cities and gave tax breaks and grants; these areas were revived. It could not have happened without the government's support.

The last stops on the UNIDO tour were Shannon and Dublin in the Republic of Ireland. Returning to Saudi Arabia in September 1969, Al-Zamil felt his understanding of industrialization had been enhanced and his mind broadened. "That fellowship gave me very good experience and a lot of insight."

Back at his old job in Riyadh at the Industrial Studies and Development Centre, he found he had gained prestige. The Saudi ambassador who had witnessed his speech in India had been sufficiently impressed to write a glowing letter of recommendation to the chairman of the Centre, Abed Al-Sheikh. Al-Zamil comments that he was "sure that letter helped my advancement. It was very important for me."

Al-Zamil occasionally met with Al-Sheikh, though he did not work with him directly. He formed closer relationships with the director-general of the Centre, Mahmoud Taiba, and his deputy, Nasser Al-Saleh; Taiba, who had trained as an electrical engineer, was an especial inspiration. Al-Zamil explains,

He was very well known for his dedication, hardworking attitude, honesty, and integrity. I very much respected his clear vision and

modesty. He was down to earth; he had very strong religious beliefs and a very clear mind. This man had a very positive role in my life and development. I always had his support.

Taiba was later chosen to head the Electricity Corporation. I call him “the father of electricity” for all the support he gave to this sector. I admired his dedication. Later when I became the minister of industry and electricity, I still considered him my boss, even though technically he reported to me.

Marriage, Family, and Promotions

Abdulaziz Al-Zamil had become engaged to Hessa Al-Bassam before he left for India and Europe. “The most exciting thing during that time away was getting letters from my fiancée and exchanging letters with her. Four months after I returned from the fellowship, we got married. That was in December 1969.”

The first of the couple’s children was born in 1971: a son, Osama, was followed by three more boys (Sattaam, Ahmed, and Omar) and two girls (Modawi and Rukaya). Abdulaziz would become blessed by and grateful for his good fortune in finding “a very dedicated wife, who has helped me very greatly in the upbringing of my children. I really could not have managed without her.”

In Riyadh, at the start of what would prove an exciting new decade, Abdulaziz adjusted to his new circumstances. Many friends and relatives were returning from the United States, and he began to renew old associations. The cousin he had followed to USC, Ahmed Al-Zamil, was now a petroleum engineer based at the Ministry of Petroleum and Mineral Resources in Riyadh. He would go on to become deputy minister of petroleum and would later transfer to the Eastern Province.

Others with degrees from USC were working in government-related roles. Solaiman Al-Solaim, who had gotten a bachelor’s degree in Egypt and had worked in Saudi government before going to USC, became the brother-in-

law of Abdulaziz's brother and after a period in academia would be appointed minister of commerce. Al-Zamil explains how the Saudi government chose its new recruits:

Three or four of the Saudis who were with me at USC later became ministers. The government wanted people with good English-language skills and experience. The elders in the government were gradually retiring and being replaced; novel organizations, fresh institutions were being formed. The ministries were expanding, and they needed new people.

Abdulaziz's older brother Abdulrahman returned to Saudi Arabia in 1970 and took a job in Dhahran at the University of Petroleum and Minerals (later the King Fahd University of Petroleum). Its dean of sciences, Abdelaziz Al-Gwaiz, with a BS from the University of Texas and a PhD from the University of California, Los Angeles, called Abdulrahman and asked, 'Why don't you join us?' The institution was just seven years old, established by Ahmed Zaki Yamani, then the minister of petroleum and mineral resources. Al-Zamil describes the university as "an engineering school teaching basic disciplines: mechanical, electrical, civil, and chemical engineering. In the U.S., it would have been called an institute of technology."

The initial faculty had been drawn mostly from the United States and the United Kingdom, with some from such Middle Eastern countries as Egypt and Jordan. Al-Gwaiz was the first full-time Saudi faculty member and eventually rose to be the university's vice president. He recalls, "The university was expanding in both enrollment and facilities. It had one of the most beautiful campuses, but we had capped enrollment at three thousand students because we wanted to keep classes small and provide a quality education." Abdulrahman Al-Zamil, with a PhD in international relations, would set up the social sciences department.

In 1964, the university had offered employment to Ghazi Al-Gosaibi, an old friend of the Zamil brothers from Bahrain. He had returned to Saudi Arabia from USC with his master's degree in international relations. While it was "a tempting offer," Al-Gosaibi wrote in his memoirs, "I apologized to Mr. Yamani because the University of Petroleum and Minerals did not have a subject I could teach." Al-Gosaibi went on to serve on the faculty of King Saud University in Riyadh and later completed a PhD in London. He also

published books of poetry, produced and presented a current-affairs television program, and built a formidable network of contacts. This was only the start of his legendary career.

Al-Zamil too, less outwardly ebullient and more inwardly focused, was moving toward new horizons. He soon was promoted, becoming head of the Industrial Cities Division of the Industrial Studies and Development Centre and then going on to run the entire technical department.

I was a regular industrial engineer; then they sent me for training followed by my fellowship. Later I was put in charge of the planning of small industrial projects until my responsibilities shifted toward industrial cities. Then I became the manager of the industrial projects department.

In 1974, Al-Zamil was named deputy director-general of the Industrial Studies and Development Centre, a significant stepping-stone. “That was a big move; I was overseeing the Centre.”

A Vision for Development

Abdulaziz Al-Zamil was about to participate in a momentous modernization program central to the industrialization of Saudi Arabia. The stage for this had already been set over the previous decade.

In 1962, a royal decree had launched the General Organization of Petroleum and Minerals, better known as Petromin. A part of the Ministry of Petroleum and Minerals, subordinate to Minister Ahmed Zaki Yamani, Petromin was created to serve as a state-owned equivalent to the private, foreign-owned Aramco. It was to undertake exploration, refining, and distribution of petroleum and mineral resources not already in the sphere of Aramco.

Over the next decade, Petromin would pursue a variety of industrial ventures, most of which never got off the ground, giving the agency a reputation for ineffectiveness. Typical of this was Petromin’s project to create a petrochemical fertilizer plant producing ammonia and urea. Started in 1965 and carried out by Occidental Petroleum, it was marred by flaws in design and ended up in the International Court of Arbitration. The plant went on line in 1969, but it only operated at about 40 percent of capacity.

The year 1962 saw another important event for Saudi Arabia's development. Crown Prince Faisal, who had resigned as prime minister in December 1960, became prime minister once again, and his policies would define the country in the coming decades. He focused on modernizing the country as well as increasing the state revenues that would make that possible. In late 1964, King Saud abdicated the throne, and Prince Faisal became king. Through his spending on administration and education, he sought to create the structures and expertise needed to formulate and implement his ambitious development strategy. An important step in that direction was the creation in 1965 of the Central Office of Planning, which would later become the Ministry for Planning. Initially, however, he put the greatest emphasis on stabilizing the country's finances.

In September 1969, the Saudi government unveiled its first five-year National Development Plan, with objectives in education, communication, transport, and industrialization. In many ways, the plan was more of a wish list than a step-by-step outline of how development would be pursued over the next five years. Though state revenues had risen three-fold, they were still too modest to fund the ambitions of the five-year plan.

The increase in revenues had come about despite rather stable oil prices. It was partly due to a rise in production, which doubled in the 1960s, but it was also due to the fact that the Saudi government had adeptly secured a larger share of the profits of Aramco. The Saudi government had also put gradual pressure on Aramco's leadership to provide greater opportunities for Saudis to hold important positions in the company. Although this shift in personnel worked to Aramco's advantage, it also paved the way for the company to become a state-owned Saudi enterprise.

Early in the next decade, the price of oil began an upward climb. By the standards of the twenty-first century, the increase was modest, but in the 1970s, after decades of relatively stable oil prices, the increases seemed significant. The price of oil rose between 1970 and 1972 from \$1.30 to \$1.90 per barrel of Arabian light crude. Oil revenues to the state nearly doubled, and production increased. At the end of 1972, the Saudi government acquired a 25 percent interest in Aramco. According to the agreement then drawn up, the Saudi state would acquire a majority interest in the firm in 1982. However, outside events hastened the pace of acquisition, and in 1980, the Saudi government became sole owner of the oil company.

Meanwhile, Petromin, notwithstanding its lack of effectiveness, pursued industrial joint ventures with foreign firms. In 1973, Minister Yamani had given a talk in which he hinted that Saudi Arabia might only sell oil to companies that were willing to assist it in its industrialization effort. Soon thereafter, Shell Chemical USA and other firms began negotiating with Petromin about major joint-venture projects, some of which were in the billion-dollar range. In connection with these and other industrial projects, Petromin planned an ambitious gas gathering and liquefaction project for eastern Saudi Arabia to deliver needed power and feedstock for power and industry.

Parallel to this and probably encouraged by rising revenues, in October 1972, the Saudi government asked the Bechtel Corporation to begin work on a proposal to build an industrial city in Al-Jubail, which was centrally situated, with deep-water access to customers in the Middle East and around the world. In June 1973, a proposal was presented to King Faisal, who handed it off to a committee for further study.

Events would soon provide the Saudi government with the means to do more than just plan and imagine industrial development. In October 1973, the outbreak of war, pitting Egypt and Syria against Israel, eventually led King Faisal to announce an embargo on the sale of oil to countries assisting Israel. Oil prices soon skyrocketed and would continue to rise for nearly a decade. As a result, Saudi state oil revenues increased dramatically, amounting to \$4.3 billion in 1973, more than double what they had been two years earlier. (The next year they totaled \$26 billion, reaching their zenith in 1981, at \$116 billion, after which they began to decline.) In May 1974, King Faisal accepted the Bechtel proposal in principle, and in June, a contract was signed whereby Bechtel would receive \$17 million to develop a master plan for the industrial city of Al-Jubail.

In February 1975, the second five-year National Development Plan was unveiled, calling for plants that would gather and treat the natural gas being wastefully flared at oil wells. The plan also called for the major development of “hydrocarbon-based industry.” It posited the creation of an industrial complex in the eastern part of Saudi Arabia, as well as “pipeline transfer of hydrocarbons” to the west to form “a second industrial growth pole.” Aramco was asked to develop a master gas system, estimated to cost up to \$14 billion, that would harness the gases associated with petroleum production and make them available as petrochemical feedstock and as a source of power for the

generation of electricity, the operation of desalination plants, and steelmaking. Aramco and the Saudi government had long been fully conscious of the need to conserve energy, protect the environment, and use gas as a raw material, but the investment needed to gather and process gas on the scale required was a huge obstacle. That obstacle, of course, disappeared with the increase in Saudi state revenue.

The development of the Saudi Master Gas System ended the wasteful and environmentally harmful practice of “flaring.” Abdulaziz Al-Zamil recalls seeing flares, a familiar sight to generations of Saudis, during weekend trips through the desert:

The road from Riyadh to the Eastern Province was not very good. We’d stop on the way, in the desert, for rest and refreshment, and we’d see the oil fields and the gas being flared off. One time, soon after sunset, we saw the flares lighting up the evening sky, and my son Osama, having attended one or two birthday parties, said, “Daddy, happy birthday!” He’d seen these flares and thought they were candles. Using—and adding value to—this vital natural resource was in the mind of every Saudi passing by the flares. An end had to be put to such a waste.

I remember saying to my wife then, “We will find a way to stop this. It may take some time, but we will create a chemical industry that makes good use of the gases being wasted here. This is my dream.”

“To turn off all the gas flares in the desert,” says Al-Zamil, “required technologies, partners, a lot of money, too. But the government courageously decided to embark on projects that ended the waste of a valuable resource.”

On 25 March 1975, King Faisal was shot at point-blank range by his nephew Prince Faisal bin Mus’aid, whose brother had been killed years before in protests against television. Prince Khalid became the new king, and a younger brother, Prince Fahd (minister for the interior and previously minister of education), became first deputy prime minister and crown prince. A modernizing figure since the 1960s, Prince Fahd was enormously influential in the new government. Many believe he was the main champion of Saudi industrialization as well as the key player in the field of economic and administrative development. King Khalid’s reign would be marked by explosive growth in the country’s physical infrastructure.

King Khalid quickly created a Royal Commission to oversee the development and operation of the industrial city in Al-Jubail, which Bechtel was already planning, and also one in Yanbu, on Saudi Arabia's western coast. Yanbu, an ancient port on the Red Sea, had trading links to North Africa and was known to travelers making the pilgrimage to Mecca. Al-Jubail and Yanbu would in time become major outlets from which Saudi Arabia could export its crude oil, natural gas liquids, and refined products. The Royal Commission selected Ralph M. Parsons Company as the chief contractor for the Yanbu project.

The building of the industrial cities was an unprecedented undertaking. They would include not only large industrial complexes but also docking facilities, pipelines, roads, desalination plants, housing for workers, and so forth. The Royal Commission, with Crown Prince Fahd as its chairman, was able to cut through the red tape, supervise the projects, and ensure that Saudi companies participated as subcontractors. Actual construction of Al-Jubail would start in 1976; Yanbu's construction would begin in 1978. The development of the industrial cities would cost the Saudi government approximately \$35 billion. Moayyed Al-Qurtas says of the significance of these investments,

It was such a big challenge to the government to establish petrochemicals. The Master Gas System alone cost \$14 billion. The industrial cities cost twice as much. The total annual Saudi budget in the middle of the 1970s was in that neighborhood. It was an unbelievable investment. Who dared to make that decision? I think the late King Fahd, then crown prince, was at the center of this. He had the guts to push for such daring measures.

In October 1975, there was a critical change in the Cabinet of Ministers, probably at the prompting of Crown Prince Fahd. The number of ministries was increased from fourteen to twenty, and several of the brand-new ministers were Western-trained young technocrats. One foreign newspaper described it as one of the youngest and best-educated cabinets in the world, and Saudis referred to the new cabinet as the "Doctors Cabinet" because nine of the ministers had PhDs. Among these was the head of the new Ministry of Industry and Electricity, Ghazi Al-Gosaibi.

The Ministry of Electricity and Industry

The Ministry of Industry and Electricity was largely made up of units that had come from the Ministry of Commerce and Industry, such as the Electrical Services Department, the Industrial Studies and Development Centre, and a unit supervising private-sector industries. Al-Gosaibi believed that the petrochemical and mineral projects currently in the hands of Petromin should also be brought into his ministry, and it appears that he had the support of Crown Prince Fahd, who agreed that the new Ministry of Industry and Electricity should oversee the creation of Saudi Arabia's petrochemical sector. Al-Gwaiz notes that

Prince Fahd liked him [Al-Gosaibi] so much that he said, "Why don't we let the new minister of industry do the petrochemical development?" When he took this position, he came under a lot of pressure from the minister of petroleum and minerals, even from Aramco. "Why are we doing this? This has never been done." Aramco also wanted to develop the petrochemical sector. But Al-Gosaibi was a very strong man, and the crown prince relied on him. He insisted, "Al-Gosaibi should develop the petrochemical sector."

A committee was formed to decide the fate of the petrochemical and metal industries, but its decision may have been a foregone conclusion. After a few months, it announced that the petrochemical and metal industries would be within the purview of the Ministry of Industry and Electricity. A few months later, Al-Gosaibi's office was flooded by a mass of documents from Petromin. In his memoirs, Al-Gosaibi describes the situation:

Vast studies in the shape of files filled an entire room. What could a new minister do with a roomful of studies on projects costing billions of dollars? Where and how should he begin? Where could he find the human resources to deal with this enormous challenge? When I began to look around for young men qualified to manage industrial projects, I found exactly what I needed at the Industrial Studies and Development Centre.

Al-Gosaibi tapped Abdulaziz Al-Zamil, then thirty-three years old, to be the leader of a New Projects Unit, which would work within the Industrial

Studies and Development Centre. He entrusted Al-Zamil and his eight-man team with the task of sorting through and assessing the feasibility of industrial projects, asking such questions as what products will the new enterprise produce, how much demand exists for them, how are they to be sold, how will they be distributed, what is the competition, and what price is possible?

In evaluating what Petromin had done, Al-Zamil had personal briefings with Petromin's governor, Abdulhadi Taher, regarding the status of projects.

We needed to see what Petromin had done: studies and negotiations. No projects had been implemented till then. Once responsibility was clear, we needed to get all the documents and update ourselves on the status of discussions with various companies. From among the vast number of projects that Petromin had considered, we wanted to select the most promising and then pursue negotiations. The Ministry of Petroleum and Mining had helped Saudi Arabia explore the start of a petrochemical industry but had nothing concrete to transfer, only three years of discussion with various companies—nothing well defined.

Al-Gosaibi less kindly remembers the situation that Al-Zamil faced when projects from Petromin were received. He recalls that though some of Petromin's projects were well advanced, "ultimately, none envisioned items that we could readily make and easily sell. We abandoned them."

The choice of Al-Zamil to take charge of the New Projects Unit was a good and logical one. As Al-Gwaiz puts it,

Al-Gosaibi didn't know much about industrialization, so he looked for a man who could build this pyramid. There weren't too many people who could. Al-Zamil was the right man at the right time. It was incredibly challenging for a young engineer to be told, "Go and do that." It was a very difficult task.

Indeed, it is not surprising that Al-Gosaibi chose Al-Zamil. Besides being best prepared for the job, Al-Zamil was someone Al-Gosaibi knew and trusted. Their families were members of the Saudi community in Bahrain. The two men had worked together in the Arab Student Association at USC. The Al-Gosaibi and Al-Zamil families shared social and school links and had similar

aspirations; Abdulaziz's brother Abdulrahman and Al-Gosaibi had studied at the same time in Cairo and the United States.

However, it should be emphasized that despite the personal ties between the two men, Al-Gosaibi chose Al-Zamil to lead the new task force because of Al-Zamil's unique combination of intelligence, training, integrity, and experience. Al-Gosaibi in his memoirs states,

The only colleague whom I considered a friend before my appointment was Abdulaziz Al-Zamil. It was my good fortune that he had already risen to the position of deputy director general at the Industrial Studies and Development Centre. Otherwise I might have missed out on the services of one of the most qualified, skilled, and honest people to work for the ministry.

Al-Zamil had many characteristics that qualified him for the job. His academic training, combined with comprehensive, applied, hands-on experience in the Kingdom and abroad, enabled him to develop a valuable breadth of vision. He was competent, popular, and quietly confident; a good listener and shrewd observer who had proven himself at the Industrial Studies and Development Centre, he was seen as a "safe pair of hands." Though he had no PhD, he felt little need for one. In this regard, he fondly remembers King Fahd's "touching and sincere" attitude on the matter:

I got an honorary doctoral degree from King Fahd: he always called me doctor. Once, one of the ministers corrected him by saying that I'm an engineer and not a doctor, but he replied by saying that he always saw me as a doctor. I had his full support, especially in my endeavors in industrialization.

Fahad Al-Rajhi, who has known Al-Zamil for more than thirty years and has worked closely with him since the 1990s, describes Al-Zamil's personal traits and qualities: key among them are a strong inner vision, an unusually precise attention to detail, and an ability to direct and motivate others to implement his strategy.

He's very quiet. He doesn't talk very much, but he listens; and he concentrates when he listens; and he remembers things. He reads very carefully, and whether it's one page or hundreds, he reads every

word. I know this because I send him things and I'm surprised at how he knows the details of what I wrote.

Al-Rajhi further notes that Al-Zamil, who strongly relies on his inner judgment and instinct, is somewhat atypical in his family.

The Zamil family has certain traits. They are very ambitious. They are very courageous. They are very outspoken. They say what's on their minds and stand up for what they think is right. They are very assertive—not in a bad sense but in saying what they want and in verbalizing what they are thinking. Abdulaziz is not like that. He doesn't talk too much. He thinks a lot. He listens a lot.

He tends to keep his ideas to himself. He's very sensitive about timing, about saying something or exposing an idea. He listens, calculates, and then maybe he says something. He keeps it to himself until he sees the right time to bring it up.

The young men of the task force led by Al-Zamil were eager to participate in their country's industrialization. The need to diversify the Saudi economy and reduce dependence on oil had long been the concern not only of the Saudi government but of many far-sighted individuals. Another important value of industrialization was its ability to create employment opportunities for Saudi citizens. Moreover, as had been demonstrated with Aramco, industrial enterprises could serve as training grounds for young Saudis, providing them with the expertise, confidence, and managerial skills to apply elsewhere in the economy and government. Aware of this, the members of the task force viewed their mission as serving the interests of the country.

As their leader, Al-Zamil was acutely aware of the importance of the task he had been given. One of his first steps was to notify Petromin's erstwhile joint-venture partners that the Ministry of Industry and Electricity, not Petromin, was the body with which they would now have to negotiate. In some cases, negotiations with Petromin had progressed rather far; joint-venture partners were eager to move forward and realize the projects that had been under discussion. They were soon disappointed.

Larry Wheeler of Shell Chemical USA recalls how Shell had approached Petromin in 1973 about a chemical joint venture, but this was before the oil crisis. Shell acted in response to something heard through the grapevine, that

Saudi Arabia might reserve its oil sales to entities that were willing to assist the country's industrialization efforts. A team from Shell, in which Wheeler had an important role, negotiated long and hard with Petromin, and Shell soon unveiled plans for a joint venture that would produce ethylene as well as other petrochemicals.

Negotiations followed, and by August 1974, an interim agreement had been signed between Shell and Petromin that called for feasibility, engineering, and other studies. After these were completed and further negotiations carried out, Shell expected to sign a final agreement in December 1975. Then it learned that responsibility for the joint venture had been transferred to the new Ministry of Industry and Electricity.

Shell representatives met with Al-Gosaibi and Al-Zamil in New York City, expecting to take the next step forward on a petrochemical project. To their dismay, they were told that negotiations would have to start over. Al-Gosaibi suggested that an interim agreement be signed that called for a more comprehensive feasibility study by Shell. As Wheeler recalls, "It seemed Al-Gosaibi and Al-Zamil did not completely trust us, and it appeared they did not trust the know-how of Petromin." Given Petromin's reputation, Al-Zamil's and Al-Gosaibi's reluctance to move forward on what Petromin had already negotiated was certainly understandable. Both parties agreed to conduct a more comprehensive feasibility study. For the next three years, at regular intervals, Shell would send its team to the Kingdom to negotiate, each time for five days at a stretch. Al-Gosaibi and Al-Zamil also informed other potential joint-venture partners that negotiations would have to start again.

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