

Chapter 6

Chairman of SABIC (1983–1995)

In the autumn of 1982, King Fahd asked Ghazi Al-Gosaibi to become the minister of health. Seeing both the need and opportunity to improve Saudi Arabia's health services, Al-Gosaibi accepted the position. Aware of the crucial importance of industrialization to the country's future, he also retained the position of minister of industry and electricity. For nearly a year, he juggled the responsibilities of the two cabinet posts. In his memoirs, he recalls the strain this created: "At times I went several days without sleeping. My wife said to me, 'This is going to kill you!' In truth, it nearly did."

Exhausted, he finally informed King Fahd that he needed to relinquish the post of minister of industry and electricity. The king responded by asking him to name possible candidates to succeed him. Al-Gosaibi remembers how he handled the request:

Much hangs on the reliability of such advice. I discharged the responsibility of the trust placed in me by putting forward a list of four candidates, each with a detailed curriculum vitae on the man's career, experience, qualifications, strengths, and weaknesses. Abdulaziz Al-Zamil headed the list. After a few days, the king informed me that his choice had indeed fallen upon Abdulaziz, who took up the appointment.

Years of collaboration with Al-Zamil in launching and developing SABIC had convinced Al-Gosaibi that Abdulaziz was the man best qualified to succeed him. The development of SABIC was the centerpiece of Saudi Arabia's industrialization drive. Who was more intimately acquainted with the tenets underlying the drive's origins and evolution? Who knew the key people at SABIC and the key partners better? Who better understood the challenges ahead in developing Saudi Arabia's industrial sector?

The appointment came to Al-Zamil as a complete and sudden surprise. He learned of his selection only a week before he was to assume the position of minister of industry and electricity. However, he readily accepted the new challenge. On 22 October 1983, he went with Al-Gosaibi to meet the king and take the oath of office. This major promotion put him on the front line

of Saudi Arabia's industrialization, even as he reluctantly surrendered the great satisfactions he had found in the job he was leaving behind:

If I had not been asked to serve as minister, I most certainly would have remained at SABIC. Being promoted to minister was a great honor. It involved great responsibility, and it offered me the opportunity to serve my country in many ways. I was one of the youngest ministers ever appointed, but serving as chief executive of SABIC from its infancy had been a great adventure. I knew I would miss the day-to-day challenges of leading the company.

In the coming years, Al-Zamil took on an array of new responsibilities. He participated in regular cabinet meetings and contributed to decisions relating to Saudi Arabia's policies. Given the cabinet's quasi-legislative role, he would help prepare legislation and participate in interministerial meetings concerning the details of new regulations. He represented Saudi Arabia abroad at economic meetings and summits, as well as in trade visits to attract foreign investment.

There was one familiar task for Al-Zamil in his new position. It was to keep SABIC on course as the engine of Saudi industrialization. As minister of industry and electricity, Al-Zamil now became chairman of SABIC. Unlike many chairmen, he brought to the job the perspectives of an insider:

I knew the people at SABIC very well—their strengths. I knew SABIC's joint-venture partners: after all, I had negotiated directly with them. I had played a critical role in putting SABIC on its course, and I had confidence in the direction that SABIC was going. As chairman, I could no longer participate in the everyday aspects of the company, but I spent at least one-and-a-half days a week at the company.

That allowed me to keep an eye on things and to participate in the development of the company. My role was to advise, to help set objectives, to facilitate, to encourage, to motivate, and ultimately to make things happen. I urged people to move forward in achieving their goals. I discouraged procrastination.

I would say, "Let's not spend a lot of time theorizing. Let's get things done. The most important thing is to set targets and work toward achieving them."

Al-Zamil's successor as CEO was Ibrahim Ibn Salamah: "I nominated him to succeed me as SABIC's managing director." Ibn Salamah had been with Al-Zamil at the Industrial Studies and Development Centre and had gone with him to SABIC as Al-Zamil's second in command. Ibn Salamah had a degree in mathematics from the University of Texas and also one in industrial studies from the Netherlands. He had been involved in joint-venture negotiations and was acquainted with all of the projects.

Other key individuals continued to serve at SABIC: Abdulaziz Al-Jarbou was head of projects, Abdullah Nojaidi led SABIC Marketing, Ltd., and Idris Tairi was director general of finance and investment. The important function of planning remained in the hands of Nasser Al-Sayyari, and Saad Salamah remained head of administration and organization. Leadership at PETROKEMYA, now totally in SABIC's control, was the responsibility of Moayyed Al-Qurtas, its president. Mohamed Al-Mady, who would succeed Ibn Salamah at SABIC in 1998 as CEO, had recently returned to Saudi Arabia after training in Houston. He joined SADAF (the venture with Shell) in Al-Jubail.

Al-Gosaibi and Al-Zamil had always envisioned SABIC as a catalyst for industrial development, using Saudi Arabia's mineral and hydrocarbon wealth to feed Saudi downstream industries as well as industries overseas. Al-Zamil notes,

I truly believed that the Kingdom could become a leading producer of petrochemicals and the home for thriving downstream industries that would manufacture plastic products such as piping, insulation wires, and yogurt containers, and serve a broad range of industries.

Indeed, SABIC in the 1990s would stimulate a number of industries that would rely either on petrochemical or steel products. HADEED, for example, produced iron reinforcing rods for Saudi Arabia's growing construction sector, and SABIC's petrochemical operations encouraged the growth of a Saudi plastic conversion industry. In 1983, the annual domestic demand for plastic resins had been only 15,000 tons. By 1993, demand had grown to 300,000. What had been but a handful of processing plants swelled to nearly 300 by 1995, when Al-Zamil stepped down as chairman of SABIC.

However important its role as a cornerstone of Saudi industrialization, SABIC would not have made a profit, let alone flowered as it did, had it

depended solely on the Saudi domestic market or even on the Middle East market. Established as a commercial entity, not a state-owned company dependent on subsidies, SABIC from the outset depended on overseas demand for its petrochemical products. To succeed, it needed the right mix of products, a powerful marketing arm, a good insight into opportunities on the horizon, advanced quality-control systems, and the ability to acquire and develop new technologies. With Al-Zamil at the helm, it progressed in all these areas.

The Product Mix

By 1983, SABIC had initiated nine chemical operations based on methane and ethane. Three were already in operation: the Saudi Arabian Fertilizer Company (SAFCO), inherited from Petromin, producing urea and sulfuric acid; the Al-Jubail Fertilizer Company (SAMAD), a joint venture with the Taiwan Fertilizer Company, producing urea; and the Saudi Methanol Company (AR-RAZI), a joint venture with a Japanese consortium led by Mitsubishi Chemical Gas Company, producing methanol. Over the next two years, six other SABIC operations would come on line, adding seven chemicals to SABIC's product line: ethylene, ethylene glycol, ethylene dichloride, linear low-density polyethylene, high-density polyethylene, styrene, and caustic soda. By 1985, SABIC would be producing about six million metric tons of chemicals annually.

To this first generation of SABIC products a whole range of chemicals would be added. Even as SABIC was developing its initial batch of joint ventures in the early 1980s, it was already looking ahead to manufacture chemicals based on butane and propane feedstock (butene-1, butadiene, and propylene). It was also planning to produce plastic resins that were in high demand, such as polyester, polystyrene, and polyvinyl chloride (PVC). These would use commodity chemicals as feedstock (methanol, styrene, ethylene dichloride, and ethylene glycol) from SABIC plants that were already operating.

To move into the manufacture of these "second-generation" chemicals, SABIC needed new technologies. Some would come through joint ventures,

but others would be gotten through licensing agreements and would not involve the participation of a Western partner. Clearly, SABIC was ready to move ahead on its own. By the time Al-Zamil stepped down as chairman in 1995, the company had expanded the number of its products from twelve to twenty-one. Most significant, it was producing the six most important plastic resins on the market: linear low-density polyethylene, high-density polyethylene, polystyrene, polypropylene, polyester, and PVC. Driving the expansion of the product line was PETROKEMYA's evolution and the creation of three new subsidiaries: the National Plastic Company (IBN HAYYAN), the Saudi-European Petrochemical Company (IBN ZAHR), and the Arabian Industrial Fibers Company (IBN RUSHD).

PETROKEMYA

Dow's withdrawal in 1982 from PETROKEMYA presented SABIC with both a challenge and an opportunity: the challenge of creating a state-of-the-art petrochemical operation without the help of a major chemical company, and the opportunity to prove to skeptics at home and abroad that SABIC could succeed on its own and that a group of young Saudis had the wherewithal to build and run a high-tech enterprise.

To outside observers, the forecast was not promising. In the months leading to Dow's departure, many decisions had been put on hold, causing much concern among those at SABIC who were involved in the joint venture. Further delays came in the wake of Dow's departure. Production had been scheduled to begin in 1984 but did not get further than a test run. However, Dow's abandoning the joint venture ultimately had a liberating effect. SABIC was unfettered by the limits of a joint-venture agreement. It no longer needed to consult with Dow before adding to the product slate or expanding. In the end, this allowed PETROKEMYA to make up for lost time. Al-Jarbou explains,

Dow's withdrawal provided SABIC with a chance to be on its own and free to do what it wanted to do. That's an advantage. In all of these joint ventures, SABIC's partners have veto power. Even today, if SABIC wants to create a product in one of its joint ventures, it has to ask its partner for permission. He can say yes or he can say no. SABIC is at the mercy of its partner. Both parties have to agree.

There were cases where SABIC wanted to do things and the partner said, “No. This is our product slate. This is our expertise. We just want to focus on that.” With Dow’s withdrawal, we suddenly had total freedom.

That’s why PETROKEMYA became a real pivotal company for growth and for innovation, for bringing in new ideas. Now PETROKEMYA is the largest complex that SABIC has. That is because there is no venture partner. When PETROKEMYA expanded, it took land from KEMYA and other SABIC operations that were not progressing as fast.

PETROKEMYA became a pivotal company indeed. With Al-Qurtas as president, it moved forward with new products. Supported by Ibn Salamah and Al-Zamil, Al-Qurtas was able to move the company beyond the production of ethylene and styrene. He acquired technologies for the manufacture of polystyrene, which required butene-1. To produce butene-1 and eliminate the need to buy it from abroad, he acquired alphabutol technology from the Institut Français du Pétrole in 1985. PETROKEMYA then worked with SABIC’s Technical Services Laboratory, an arm of SABIC Marketing Services, Ltd., to create a version of alphabutol technology that fit PETROKEMYA’s needs. Together with Institut Français du Pétrole, SABIC would later license this adapted technology to other firms: it represented the first major innovation to come out of SABIC.

PETROKEMYA continued to expand its product slate. In 1991, it obtained mixed-feed cracking units that would allow the manufacture of propylene, butadiene, and benzene, depending on the feedstock being used. None of these chemicals were being produced by other SABIC subsidiaries at the time. PETROKEMYA also was free to expand its production of ethylene. Originally scheduled to produce 500,000 metric tons a year, after a de-bottlenecking operation in 1987, it increased production of ethylene to 650,000 tons. By 1995, it was producing more than 1,000,000 metric tons annually. Clearly, the challenge posed by Dow’s withdrawal had been met, and the opportunity exploited.

IBN HAYYAN

Polyvinyl chloride is a commodity plastic used to make a wide range of products: water pipes, food packaging, insulation for electric wires, medical devices, home flooring. It has a huge market, and from the start, Al-Zamil was eager to add PVC to SABIC's product line. In 1984, this desire led to the formation of a joint venture named the National Plastic Company, better known as IBN HAYYAN. This joint venture was established with Lucky Goldstar of South Korea in Al-Jubail, with SABIC having an 85 percent interest. It started production of PVC and vinyl chloride monomer in 1986, and in October of that year, the first shipment of PVC left Saudi Arabia bound for Japan.

IBN ZAHR

Looking at the petrochemical landscape in the Arabian Gulf region today, with several European companies playing prominent roles in joint ventures, it is difficult to imagine the level of trepidation with which Europeans greeted the creation of SABIC in the mid-1970s. Some European executives even urged their colleagues to refuse to work with SABIC, which they viewed as a threat to the European chemical industry.

European reluctance to work with SABIC took a little time to dissipate. The first chink in the armor came in 1985 with the formation of the Saudi-European Petrochemical Company, or IBN ZAHR, a joint venture that involved Finland's Neste Oyj, Italy's Ecofuel (a subsidiary of Eni SpA), and the Saudi-based Arab Petroleum Corporation (APICORP). SABIC secured a 70 percent interest in the new venture; each of the other partners had a 10 percent interest.

IBN ZAHR was formed in response to the growing demand for methyl-tertiary-butyl-ether. This was an important additive to automotive gasoline at that time, improving efficiency and reducing pollution. Using methanol feedstock from two SABIC subsidiaries, IBN ZAHR began production. In 1995, it expanded its product slate by securing technology for the manufacture of polypropylene, becoming the first SABIC subsidiary to manufacture this very popular plastic.

IBN RUSHD

Though SABIC had proceeded successfully with PETROKEMYA after Dow withdrew, Al-Zamil still preferred working in partnership with Western firms to develop new operations. The break from this practice came in 1993 with the creation of the Arabian Industrial Fibers Company, or IBN RUSHD, which SABIC formed in Yanbu with a group of Saudi Arabian companies and one Bahraini company. SABIC retained a 52 percent interest in the venture.

IBN RUSHD was established in Yanbu to manufacture polyester textile chips, textile staples, bottle-grade chips, and carpet staples. To produce polyester, it needed ethylene glycol, which was supplied by YANPET, a SABIC subsidiary, and purified terephthalic acid, which IBN RUSHD at first imported from abroad. However, in 1995, IBN RUSHD acquired the technology to make terephthalic acid, which it soon produced in amounts that exceeded its own needs. Hence, it became an important supplier of this product for Asian markets.

Marketing

Since SABIC's success depended on serving foreign markets, it quickly needed to establish a global presence. With Al-Zamil's support, SABIC Marketing, Ltd., and SABIC Marketing Service, Ltd., created a far-flung network of distribution centers, storage facilities, sales offices, and customer-service locations. By the end of 1995, SABIC had five international offices covering Asia, Europe, and the United States; six sales and services offices in these same locations; and sixteen distribution centers and storage facilities in various places in North America, Southeast Asia, East Asia, North Africa, and Northern and Southern Europe. To coordinate this vast network, marketing subsidiaries were created: SABIC Europe, Ltd.; SABIC Americas, Ltd.; and SABIC Japan, Ltd. Service subsidiaries were also created. All of this ensured strong technical support and stable face-to-face relationships with customers. To ensure reliable access to overseas markets, SABIC also joined in creating National Chemical Carriers, which by 1995 managed a fleet of eleven large

chemical tankers. SABIC's growing marketing capability was reflected in the growth of overseas sales, from \$53 million in 1983 to over \$3 billion by 1995.

Paradoxically, even as SABIC was expanding its international marketing reach, it was also carefully seeking to maintain market stability. Aware of European anxiety about the emergence of a petrochemical industry in the Arabian Gulf region, Al-Zamil preached caution. His advice was taken to heart and became the philosophy of SABIC's marketing effort. Al-Jarbou explains how great pains were taken to ensure that SABIC was not a disruptive force:

We would go to small companies that buy a thousand tons a year, or even less, of a product. It was hard to reach these companies, but thanks to SABIC Marketing, Ltd., we succeeded. When you go to these small guys, you find they are buying from Total, Exxon, Dow, ICI, or whomever. They realize that SABIC offers them a chance to break the hold of these big producers and diversify their sources of supply. They say, "I want 50 percent from you," or even, "I want 100 percent from you."

We always responded, "No, we won't sell you 50 percent, only 10 percent." They would ask why, and we would say, "Because we want to come in gradually, in a well-organized way. We don't want to disrupt the market." In the end, everyone wanted to buy 10 percent from us.

SABIC's desire to act in a responsible and ethical manner won respect and changed the minds of many people. Al-Jarbou summons up a particular, unforgettable moment when this became apparent:

In 1987, I attended the Chemical Manufacturers Association conference in Newport Beach, California. There were about four hundred delegates in the audience, and Frank Popoff, the CEO of Dow, was giving a speech.

He understood our attitude about marketing—that we were not going to dump our products. He realized that we were fair in this and that we look for terms and conditions that are equitable. He felt we were moving on the right track and that we were doing it for a good cause in harnessing gas to create value that otherwise would be wasted.

During his speech, he looked up and saw me sitting in the second or third row. Suddenly he stopped and said, “I notice that SABIC is attending this conference for the first time. I recognize Dr. Al-Jarbou with whom Dow has worked closely. You know what? The SABIC people are very, very fair and business minded. I have a lot of respect for them. You should welcome them to the club.”

Everybody clapped. Then Popoff went on to say, “They’re going to handle marketing in the proper way. They are not going to do just anything they wish without having thought it through properly and talking with their partners.”

I telefaxed to Mr. Al-Zamil, telling him this is what I’m hearing. In a gathering like that, it was important for us to see the recognition and acceptance.

R&D and Total Quality Management

*I*n its first phase, SABIC depended on joint-venture partners to provide needed technology. As it started to establish chemical ventures without Western partners, however, it increasingly secured technologies through licensing agreements with Western companies or Western chemical engineering service firms. Ultimately, however, SABIC came to recognize the need to develop its own capability to create and adapt technologies.

This realization is reflected in SABIC’s annual reports of the 1980s and 1990s that extolled the importance of homegrown research and innovation. However, major progress in this area did not come quickly. Establishing a research and innovation function proved a challenging task. This is not surprising. After all, developing technological know-how takes time, and the training of Saudi engineers and scientists on any scale had only begun in the 1960s.

Despite the obstacles, eventually SABIC became a source of new manufacturing processes, new catalysts, and other key technologies: today it holds over ten thousand patents. This success was achieved through

commitment, persistent effort, a readiness to take on challenges, and major investment in building a research and development (R&D) capacity. The arduous process of achieving this was put in motion by Al-Zamil. Dow's withdrawal from PETROKEMYA had driven home to him the need for SABIC to develop internal technical capabilities, so he championed the development of an R&D center. His goal was to have an advanced R&D capacity in place by 1995.

At the start, SABIC research was closely tied to solving problems for customers and answering their questions. In fact, SABIC's Research and Development Group, which was formed in 1988, grew out of SABIC's Technical Services Laboratory in Riyadh. Moayyed Al-Qurtas, who was serving as president of PETROKEMYA, became the first head of R&D at SABIC. He embraced the need for R&D to work hand in hand with marketing. As he notes, even with commodity chemicals, customers often have expectations about performance characteristics:

R&D is there to work with clients who have a problem with a product, even though it meets the client's specifications. Sometimes a client will challenge us, saying, "I want a product for such and such an application. Forget about the specifications." It is for R&D to come up with a solution.

In 1987, work started on a high-tech, advanced R&D center on a thirty-three-hectare campus in Riyadh, and by 1991, the construction was completed. Al-Qurtas played the lead role in planning the new facility. Earlier, SABIC had been developing relations with academic and technical institutes, and Al-Qurtas very successfully used these contacts as a platform for recruiting researchers. By 1991, he had attracted over two hundred to his R&D team.

At the new complex, SABIC's researchers worked on improving production by fine-tuning technologies that the company had licensed, by experimenting with chemical product formulations, and by finding ways to speed up de-bottlenecking efforts at production facilities. They also worked with downstream processing equipment to determine suitability and anticipate problems. In addition, they kept an eye on developments in the industry, particularly those related to plastic resins.

The new complex was a state-of-the-art facility. Besides laboratories, it included a number of other high-tech amenities: a one-metric-ton-per-day

polyethylene pilot plant that had been installed to create experimental grades of polyethylene and to test formulations; a computerized technical information center; a high-tech voice and data network; the most modern computer hardware and simulation software; and software for gathering and processing data. The laboratories boasted the latest spectroscopy, chromatography, and microscopy instruments. In the coming years, the center would play important roles in developing new technologies and improving plant efficiency.

Besides supporting R&D, Al-Zamil also promoted systems that enhanced the quality of production. He recognized that customer satisfaction, so central to marketing success, often hinged on the ability of SABIC to deliver high-quality products consistently. In 1992, he encouraged SABIC to adopt total quality management (TQM). This approach to management, devised by W. Edwards Deming of the United States, had been implemented widely in Japan. There, it brought significant improvements in profitability by reducing waste, improving efficiency, and achieving high standards of quality. Central to TQM was improved teamwork within a given company and also close collaboration and communication between suppliers, the company, and customers.

A long-term continuous process, TQM at SABIC was coordinated by a special group that also pursued ISO 9002 certification. The process of ISO certification involves a complete evaluation of a supplier's quality system, with certification only issued when a company can demonstrate control procedures at all stages of its operation. ISO certification ensures a company will be recognized internationally for its commitment to the pursuit of excellence.

In 1992, four of SABIC's affiliates (KEMYA, PETROKEMYA, IBN HAYYAN, and SHARQ) completed ISO 9002 certification—the first companies to do so in the Middle East. By 1994, seven more SABIC subsidiaries had gotten certification. Even SABIC Marketing, Ltd., achieved certification. By 1997, all SABIC subsidiaries were ISO 9002 certified. This ensured customers the highest levels of quality, opening up new opportunities for SABIC's products.

SABIC's Metal Industries and GAS

From the outset, the focus of investment at SABIC had been the petrochemical sector, and it is through the manufacture of petrochemicals that SABIC has had its biggest impact, both domestically and globally. That being said, it would be a mistake to overlook the significance of SABIC's metal manufacturing operations, which were established to support Saudi Arabia's economic development. Initially, they supplied much-needed steel products for the construction of infrastructure: roadways, housing, manufacturing facilities, port facilities. However, in due course, they came to supply such metal products as piping and sheet metal for downstream Saudi industries.

In his role as chairman of SABIC and minister of industry and electricity, Al-Zamil recognized the value of SABIC's metal industries for the Saudi and regional economy, and he consequently guided and supported the dramatic growth of this sector of the company. During his tenure, from 1983 through 1994, by the addition of state-of-the-art manufacturing processes, the annual output of HADEED increased more than threefold growing from 800,000 to 2,200,000 metric tons. The annual output of SULB, HADEED's subsidiary in Jeddah, grew in parallel: from 170,000 to 250,000 metric tons. The product line of these operations from 1983 to 1995 remained unchanged, consisting of steel billets, rebar, and wire rod coils, but these were precisely the products needed for the infrastructural projects of both Saudi Arabia and its neighboring countries. In fact, the massive expansion of HADEED and SULB enabled Saudi Arabia to become totally self-sufficient in steel products, and in 1991, HADEED began to export its goods outside of the region—especially to Japan, Taiwan, and Singapore.

An important addition to SABIC in 1983 had been the establishment of the National Industrial Gases Company (GAS), which from the outset occupied a unique position in SABIC's manufacturing network. Unlike SABIC's petrochemical operations, which arose from the need to add value to Saudi Arabia's hydrocarbon resources, GAS was formed to supply oxygen and nitrogen in support of SABIC's various manufacturing operations. Nitrogen, because it does not support combustion, is used to purge undesirable and potentially dangerous materials from process lines and elsewhere in the

production network. It is widely used in chemical plants during repairs and at start-up.

Oxygen is especially important for the steel industry. In regard to steel manufacturing operations that use arc furnaces, as is the case with HADEED, oxygen is employed to run oxy-fuel burners that heat and melt scrap metal and to decarburize steel and slag foaming. It may also be applied for post-combustion of carbon dioxide in subsonic injection processes. Of course, besides its uses in steel making, oxygen is also used in the chemical industry, for example, in treating waste and recycling harmful emissions.

During Al-Zamil's tenure as chairman, GAS would undergo three expansions that lifted the annual production of nitrogen from 140,000 to 489,000 metric tons and the production of oxygen from 438,000 to 876,000 metric tons. This important expansion was key to the parallel growth of SABIC's petrochemical and metal manufacturing operations.

Antidumping Issues

*I*n promoting the development of Saudi industry, Al-Zamil found himself called upon again and again to deal with accusations of dumping, hurled by foreign businessmen and governments against Saudi Arabia's metal and petrochemical industries. He was compelled to stand up against efforts by foreign governments to curb imports from Saudi Arabia and other Gulf Cooperation Council (GCC) producers.

The apprehensions that European chemical manufacturers expressed about SABIC in the late 1970s and early 1980s became pleas for government protection once SABIC's operations came on line. These concerns led European governments to act. In October 1984, a few months after AR-RAZI delivered its first shipment of methanol to Europe, the European Economic Community (EEC) levied a 13.5 percent tariff on Saudi methanol.

Commenting on this action at the time, Al-Zamil argued that "the tariff is an action that is not in the interest of trade growth, and we hope that, through discussions, a solution can be found." Though he expressed his

commitment to free trade, he also noted that petrochemical producers had historically coordinated capacity to the benefit of all. Al-Zamil proposed that coordination be extended beyond existing petrochemical companies to include new producers and that capacity in previously nonproducing countries should be treated like new capacity added to existing companies. He went on to warn that if an understanding could not be reached with the EEC, Saudi Arabia might be compelled to put tariffs on European goods in retaliation.

In the press and in his public statements, Al-Zamil vociferously defended Saudi Arabia's industry, and especially its petrochemical sector, against dumping charges. Responding in late 1984 to European claims that the Saudi government was subsidizing its petrochemical industry by selling it natural gas at one-tenth the price that prevailed in Europe and one-seventh the price in the United States, Al-Zamil pointed to the many disadvantages that Saudi Arabian producers faced compared with their European and American counterparts. For example, he noted that the costs of building a petrochemical complex in Saudi Arabia were much higher than elsewhere; manpower was more expensive in Saudi Arabia, especially the start-up cost of training Saudis; and Saudi companies were forced to provide housing for employees. Al-Zamil asked those in Europe calling for tariffs to look at the entire trade relationship between Europe and Saudi Arabia. He noted how valuable the Saudi market was for European manufacturers of consumer products, pointing out that each year Saudi Arabia imported over \$10 billion in goods from Europe that were practically free from tariffs.

Saudi petrochemical products were not the only target of antidumping charges, and European producers were not the only ones to take action against Saudi imports. In November 1985, as a result of complaints from steel producers in the United States, the U.S. Department of Commerce issued a preliminary ruling that Saudi Arabia was subsidizing the carbon-steel production of SABIC's HADEED. The Commerce Department went on to announce that a 28 percent duty would be imposed on steel imports from Saudi Arabia. Commenting on this turn of events many years later, Al-Zamil recalls,

We had a small steel plant, not much. It was the joint venture with Korf Stahl, which also had operations in the United States to which Korf Stahl had exported a few thousand tons of our carbon steel wire. All of a sudden, four months after the material had arrived in

the United States, we were confronted with an antidumping case. It was quite a surprise and a completely new experience.

To deal with the antidumping charges, we would have to answer hundreds of questions and hire lawyers who specialize in these types of matters. It would have cost us a lot of time and money. Since, as I have said, the amount of product we exported was quite small—30,000 tons a year at most—we initially thought, “Let’s forget about it. We won’t respond to the questions, and we won’t pay a bunch of lawyers’ fees.” We asked ourselves, “Why should we go to all the trouble?”

Then we thought more deeply about the matter and realized this case was crucial. It could have long-term effects. If we did not defend ourselves against dumping charges now, we might face bigger cases down the road. So we decided to act and hired a legal firm to help us. We had hundreds of questions to answer from the U.S. Department of Commerce and the Department of the Treasury. The first point that was made was, “You are getting subsidized gas for steel production and that gives you an unfair advantage.” The second point was, “You get favorable financing.” Point three was, “All your public services (schools, roads, etc.) are free.” As I remember, point number four was, “You get seawater cooling at a subsidized cost.” Point five was, “You get iron ore at a subsidized rate.” There were many more points; I cannot recall them all.

We addressed all the points, one by one. With regard to the charge that the price we were paying for natural gas constituted a subsidy—because we were being charged \$0.75 per million BTUs (British thermal units), and the world price was six times more—we said, “Look, we are sitting on top of a huge gas deposit, so we get gas at a lower price compared to countries that don’t have gas. It is no different than a company in Canada getting hydropower more cheaply than companies in other countries.” We showed how the terms we were getting were available to all companies in Saudi Arabia, regardless of nationality.

With regard to the claim that access to free public services constituted a subsidy, we said, “This is something the government of

Saudi Arabia does all over the Kingdom. It builds mosques, roads, schools, etc. The government did build housing in the beginning for SABIC's workers, but we pay rent. It isn't subsidized." Similarly, with regard to saltwater cooling, we pointed out we pay fees to cover the costs. On and on, we answered all the points.

The case was brought before judges who ruled that it was unfair to apply a 28 percent tariff—only a 2.6 percent tariff should be imposed. The secretary of the Treasury of the United States decided to waive the tariff. The case was an important precedent to which we have referred whenever claims of subsidies are made, in the United States or Japan.

Through the 1980s and into the 1990s, Al-Zamil worked to decrease or eliminate tariffs imposed on Saudi Arabian products. European countries, however, persisted in their efforts to discourage the import of Saudi petrochemicals. In 1987, the enactment of the Single European Act, the core element of which was the creation of a single market within the EEC, seemed to Al-Zamil to offer avenues for better Saudi-European cooperation. In 1989, speaking in Jeddah, he envisaged increased cooperation between Saudi Arabia and Europe given the creation of a unified European market.

A few months later, GCC and EEC officials met in the spring to study areas of cooperation and explore the possibility of expanding trade. Al-Zamil saw how this gave the GCC an opportunity to “underscore our right” for free access to EEC markets “on a reciprocal basis.” The GCC sought a free-trade agreement with the EEC that April. Its objective was to eliminate the 12 to 14 percent tariff on petrochemicals exported to Europe, or at least to reduce the tariff to 4 or 5 percent, commensurate with the tariffs for European goods coming into the GCC.

While working to reduce tariffs and other restrictions on Saudi goods, Al-Zamil also encouraged foreign companies to form joint ventures with Saudi manufacturers. He pointed out to potential partners that such joint ventures would have all the advantages enjoyed by Saudi enterprises, such as access to low-cost feedstock, the availability of low interest loans, and the modern industrial infrastructure that Saudi Arabia had developed. He made numerous overseas visits, often with Saudi businessmen: to Japan (1984 and 1994); France (1985); the United Kingdom (1985 and 1987); Finland and

Sweden (1986); Egypt (1988); East and Southeast Asia (1990); Italy, India, and Canada (1991); Switzerland (1994); and the Netherlands (1995). He also visited GCC countries. Through his efforts, the number of foreign joint-venture investments increased.

The Gulf War

*I*n August 1990, Iraq invaded Kuwait, setting off the first Gulf War and creating anxiety among countries that depended on products coming from the Arabian Gulf region. It soon became clear that GCC countries were supplying the world with more than just oil. For example, two-thirds of the naphtha needed for Japan's chemical sector had come from Kuwait. SABIC by now was a major supplier of commodity petrochemicals. The future of these and other Arabian Gulf products now seemed uncertain. Al-Zamil remembers,

The threat to production at SABIC's complexes at Al-Jubail sent shock waves around the globe. For the duration of the crisis, SABIC customers, particularly those in the Far East, lived in fear that an air attack on Al-Jubail or a halt of shipments from the complex would create shortages in a wide range of products.

During the fall of 1990, SABIC appeared to move forward despite uncertainties, undeterred by events just a few hours' drive to the north of its huge installations. SABIC claimed that—since its facilities were geographically removed from the area of potential conflict—there was no reason to alter manufacturing or marketing operations. Safety and security measures were part of normal operations, so no extra precautions would be taken. Plants were humming away at full capacity, products were to be marketed normally, and all orders would be delivered on schedule.

Sales and profits for the first half of 1990 had dipped, reflecting shifts in the wider market, but SABIC's plans to build urea, methanol, PVC, and other petrochemical plants remained on schedule. These plans included an expansion of AR-RAZI, the construction of a third reactor at IBN HAYYAN,

an increase in capacity at PETROKEMYA, and de-bottlenecking operations at YANPET, KEMYA, and SHARQ.

In 1990, the wholesale withdrawal of Japanese personnel from the Eastern Province appeared initially as a setback, since there were three SABIC expansion projects that had been contracted with Japanese firms; however, two of these projects were only at the design stage, and the third, with Mitsubishi Heavy Industries, involved only a few staff members at Al-Jubail. As a result, Al-Zamil and the SABIC executive team forged ahead with a determinedly business-as-usual approach calculated to offer the maximum reassurance. The president of AR-RAZI noted that fall, “Everything is very calm.”

Be that as it may, the Gulf War conflict eventually affected SABIC, which was forced to revise the cost of its production repeatedly. The blow to competitors, however, was more severe. Japanese and European chemical producers battled rising naphtha costs, and concerns over continuity of supply boosted SABIC’s methanol prices. By year’s end, oil and naphtha prices stabilized, and petrochemical producers raised prices sufficiently to maintain their margins. Surprisingly enough, in the aftermath of the first U.S. air raids on Baghdad in January 1991, crude oil and naphtha prices actually fell.

The Iran-Iraq war of the 1980s had not deterred SABIC’s first joint-venture partners from investing in the region, but the risk of long-term instability (and the proximity of SABIC’s plants to military conflict) loomed and undermined investor confidence. In addition, while SABIC continued to insist that operations at its Al-Jubail complexes were unaffected, Iraqi Scud missiles were now attacking targets fifty miles south. Also there were shipping difficulties, and, like other shippers in the Gulf, SABIC had to pay large war-risk insurance premiums on its vessels.

A more urgent issue in February 1991 was the giant oil slick moving down the Arabian Gulf from Kuwait. It threatened to wreck Al-Jubail’s water supply. SABIC’s two ethylene crackers and its downstream units required desalinated water to feed their boilers. In the event of contamination, water stocks would have to be conserved for drinking, and chemical plants would be forced to close. SABIC put plastic booms and screens in place to catch the drifting crude, but SABIC engineers worried that the oil would flow beneath the booms and clog water-intake units.

The ongoing conflict caused not only Japanese personnel to leave the Kingdom. At least one European firm is said to have declared force majeure on parts of its contract with SABIC and abandoned work. Yet in a move that says much about SABIC's confidence, the war in the Gulf did not delay the announcement of a \$150 million polypropylene plant (another first for the Kingdom) to be added to IBN ZAHR, with feedstock from the new PETROKEMYA cracker.

Operation Desert Storm brought the conflict to a speedy end by the close of February 1991. Prince Abdullah bin Faisal Al-Saud, the secretary general of the Royal Commission for Al-Jubail and Yanbu, told Chemical Week, "After the situation clears and everything goes back to normal, investment is expected to get better. What has happened in the Gulf shows it is an important area for the whole world. I think when this shock has retreated, international investment will return bigger than ever." One London-based analyst commented, "There was a perceived insecurity before the crisis, first from Iran and then from Iraq. Resolution has removed that worry. There is now much greater confidence in the region than for the past fifteen years."

Privatization and Saudization

When Al-Gosaibi envisioned SABIC back in 1975, he pictured a state-owned company that would function like a private one. He also expected that through a slow but sure process this company would become a joint-stock company, with most of its shares in the hands of private investors. Al-Zamil recalls, "Al-Gosaibi understood that at first the government would own the company 100 percent, but gradually over time SABIC would be privatized, and 75 percent would pass to the private sector." In 1984, the first step in privatizing SABIC was taken when the board of directors of SABIC decided to put 30 percent of the company up for sale: 20 percent was made available to Saudi investors and 10 percent to citizens of GCC countries.

SABIC's initial public offering (IPO) was a momentous occasion for Al-Zamil. He recalls,

King Fahd had a vision to let everyone participate in the success of SABIC. The IPO—putting 30 percent of the company in private hands—was for him a particularly satisfying moment. He enjoyed seeing small shareholders become involved in the company. It made him feel good to give people this chance.

In the coming years, additional SABIC stock was supposed to be made available to the public. Al-Zamil explains,

The idea was to make another 10 percent of SABIC shares available to private investors every two or three years, steadily transforming the corporation into a private one, but the government's shares in SABIC were owned by the Ministry of Finance, which saw that SABIC was a good investment. The price of SABIC shares was always going up, and investors were being paid good annual dividends. SABIC was a reliable source of income for the state treasury, so the ministry delayed decisions to privatize further.

In the summer of 1994, following a speech by King Fahd on how the government planned to sell assets to the private sector, SABIC became “big news.” Investors speculated that SABIC might be part of state sell-offs. SABIC was seen as having “tremendous accumulated value and good long-term prospects,” producing strong returns and increased profits. Speculation was so intense that Al-Zamil had to issue a statement in August 1994, denying that the government had decided to privatize SABIC.

The denial was repeated in November by SABIC's vice chairman Ibrahim Ibn Salamah, though he disclosed “the idea of issuing shares to the public in stages had not been ruled out.” Observers believed that the long-term goal of the government was to reduce its ownership of SABIC to 25 percent, and most analysts were convinced that another public offering was actually imminent. However, no additional shares of SABIC have ever been made available to the public, no doubt because the Ministry of Finance counts on dividend payments from the organization.

Al-Zamil, however, persisted in efforts to engage the private sector in SABIC. For example, in 1986, he enabled private Saudi companies to invest

in IBN HAYYAN, which had been formed two years earlier. Consequently, 10 percent of IBN HAYYAN came into the hands of the National Industrialization Company (better known as Tasnee), another 2 percent was acquired by the Saudi Plastic Products Company, and a 1.5 percent interest was acquired by the Arabian Plastic Company. In 1993, Al-Zamil made it possible for private investors to participate in the formation of IBN RUSHD. As a result, a group of Saudi companies obtained 43.3 percent ownership of the new SABIC subsidiary, and a Bahraini company acquired a 5 percent interest.

An important achievement of Al-Zamil was his success in launching and sustaining the process of Saudization. His perseverance helped transform SABIC into a truly Saudi operation, with Saudis predominating at all levels of the workforce. As has already been pointed out, in the first years of operation, the great majority of workers and managers at SABIC were expatriates. When Al-Zamil became minister, with the exception of PETROKEMYA, expatriate executives headed up all of the SABIC joint ventures, and over half of SABIC's seven thousand employees were foreigners. By the end of 1991, however, due to constant efforts to increase Saudi participation in the workforce, 62 percent of SABIC's ten thousand employees were Saudi. During the rest of Al-Zamil's term as minister of industry and electricity, Saudization of the SABIC workforce continued unabated, and Saudis assumed the top positions in all of SABIC's subsidiaries.

SABIC worked closely with the Royal Commission—designed specifically to cut through all the bureaucratic red tape that strangles huge development projects—to create communities in Al-Jubail and Yanbu and give workers incentives to remain and settle. By 1986, Al-Jubail was a city with some hundred industries and fifty thousand residents, and a population projected to increase to almost three hundred thousand by the end of the century. According to Al-Zamil,

The Royal Commission built the initial houses. They built the schools, the mosque, the recreational facilities, the gardens, and the seafront. They built the infrastructure, and SABIC built the basic industries. Because of the good working conditions in Al-Jubail—well-paid jobs, good housing, excellent health insurance, and new schools—Saudis were attracted there, and high school graduates

considered it the place to work. Saudization has been easier in the petrochemical industry than in other industries.

The thorough and rigorous training of Saudis—a concept that Al-Zamil passionately believed in, initiated, led in person, and oversaw—has been key to SABIC’s long-term success and has had wider meaning for the Kingdom itself, facilitating the process of modernization. Especially important for Al-Zamil has been SABIC’s role in developing a cadre of experienced managers and business leaders who go on to find roles at various Saudi enterprises:

Developing managerial and business skills was one of my key objectives. Our success in this area has enabled the Kingdom to enter into sophisticated industrial sectors. The lesson of SABIC is that you must not only build and operate high-tech facilities but also develop managers and executives. When I see companies that have former SABIC employees playing leadership roles, I feel we have really achieved something.

Building from scratch a cadre of Saudis with managerial and business leadership skills was not achieved simply by hiring Saudi nationals who held advanced educational degrees, offering them good salaries and benefits, and putting them in positions of responsibility. It entailed much more. It involved creating an environment in which they could grow and develop within the company. It required presenting them with challenges and the freedom to act, as well as with the opportunity to seek counsel and support. It included preparing them for increasing levels of responsibility and making clear the career opportunities that await them. Saudization continues apace even today, as does SABIC’s commitment to sustaining a learning culture. Together they form an important part of the legacy of Abdulaziz Al-Zamil.

Measures of Success

When Al-Zamil finished his final term as chairman of SABIC, the company was on the road to greatness. Sales revenue stood at nearly \$7 billion, and net income was \$1.7 billion. The company had \$16 billion

in assets, and twelve thousand employees. SABIC had become a major global company poised for further growth and development.

In the coming decades, it would further expand its slate of products and vigorously expand its production. Seven years after Al-Zamil left the company, SABIC made its first acquisition of major overseas manufacturing facilities—the petrochemical plants of Dutch State Mines in the Netherlands—which would be followed by further overseas expansion. By 2015, SABIC had become the fourth largest chemical company in the world, less than forty years after its foundation.

The great success of SABIC from 1976 to 1995 is demonstrated in the growing income of the young company. Table 1 shows the increase in total and net income, starting in 1983, when SABIC manufacturing operations began. Income plateaued in the early 1990s, a result of low commodity chemical prices, but leapt forward again in 1995 as prices spiked and more projects came on stream.

Table 1

Year	Revenue (Million US\$)	Net Income (Million US\$)
1983	165,156	5,351
1986	984,906	65,037
1989	2,433,607	952,103
1992	2,652,252	523,771
1995	6,211,535	1,675,059

*See SABIC Annual Reports for 1983, 1986, 1989, 1992, and 1995.

Another aspect of SABIC’s success is the growth of sales volume. Table 2 shows that sales increased for SABIC nearly 90 percent in the span of five years, from 1987 to 1991.

Table 2: SABIC Marketing Sales by Volume, 1987 to 1991

Year	1987	1988	1989	1990	1991
Sales in Millions of Metric Tons	3.4	4.0	4.4	5.24	6.4

The dependence of SABIC on global markets, and its success in securing overseas customers, is indicated in Table 3, giving the destination of SABIC products.

Table 3: SABIC Shipment of Products by Region, 1991

Region	Volume (in metric tons)	Percentage of Total
Domestic	2,460,000	37
Far East	1,650,000	24
Southeast Asia	920,000	14
Europe	850,000	13
Americas	375,000	6
Middle East	255,000	4
Africa	150,000	2

The asset base of SABIC also dramatically grew during Al-Zamil’s tenure as CEO and then chairman, as indicated in Table 4.

Table 4: SABIC Total Assets, 1982 to 1991

Year	Total Assets (in billions USD)
1982	2.72
1983	3.96
1984	5.12
1985	5.81
1986	5.93
1987	6.27
1988	7.20
1989	8.00
1990	8.77
1991	9.04