

Uncertainty in the Desert Kingdom -- Business and Economic Factors for Introducing a New Building Product in the Construction Market in Saudi Arabia: A Case Study

**Feraidoon (Fred) Raafat
San Diego State University**

**Don Sciglimpaglia
California State University San Marcos
Middlebury Institute of International Studies at Monterey**

This case is a study of a U.S. based entrepreneur who had decided to create a new venture in Saudi Arabia to produce and distribute a new type of construction material with superior insulating characteristics. The entrepreneur had performed some preliminary research and looked to develop business and marketing plans to secure investment capital to fund and launch the company. He engaged a consulting group to assist him to conduct a competitive analysis, identify target markets and recommend brand-building strategies. The case provides information about Saudi Arabia and some of the economic, political and environmental issues that are faced by the country. This case could be used in international management or international marketing course.

BACKGROUND

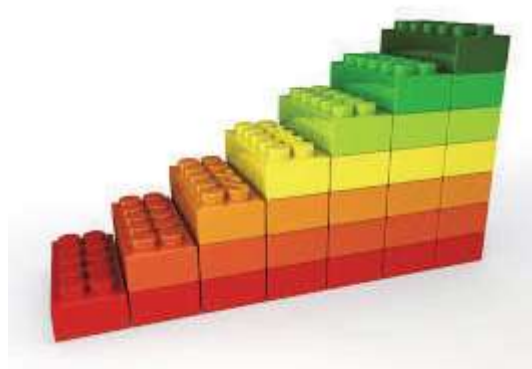
This paper presents a case study based on a small entrepreneurial company located in Southern California, which planned to introduce its new building product and technology to the Middle East; names and company background have been disguised and is based on earlier versions of the case (Raafat & Sciglimpaglia, 2018, 2015). It was started in 2015 by Jabir al-Saud, who had emigrated to the United States from Saudi Arabia twenty years before. Al-Saud had a degree in electrical engineering and worked for many years in the telecommunications industry, most recently for Qualcomm, a major wireless technology firm headquartered in San Diego. Always interested in new ventures, al-Saud had previously started a printing company and a digital photo finishing business, which he had later sold. As a Saudi-American, he was well versed in knowing some of the intricacies of doing business in the Middle East. These included knowing whom to collaborate with and understanding the role of government initiatives and influence. Al-Saud recalled his days as a youth in Saudi Arabia and wondered if he could utilize his background to help establish a new business there. He knew that many of the residential houses were typically built using simple materials, notably adobe or concrete blocks. The resultant structures, although quick and easy to build, tended to be thermally and energy inefficient and allowed sand, insects and noise to penetrate the walls. While on a business trip he happened to visit a trade exposition that had

demonstrations of various new building technologies. One of the things that he saw was a new process called insulating concrete form (ICF) products, which he immediately thought could have major application in the Middle East. That became the inspiration for SuperBrik. Within a year he was developing plans on how to enter the Saudi Arabian market with his ICF product. If he could make SuperBrik successful there, he was sure that he could be successful in other similar markets in the Persian Gulf, North African region and elsewhere in the Middle East.

THE SUPERBRIK PRODUCT

The SuperBrik product would utilize the new technology to produce building material for the Saudi Arabian market. This ICF products, is made of blocks used for poured concrete walls, with steel reinforcement added in the blocks before concrete is poured inside. Typically, these blocks utilize strong foam on both sides and are stacked one on top of each other to create the foundation and walls of a house. As used in the United States and Western Europe, ICF technology is a system of formwork for reinforced concrete usually made with a rigid thermal insulation that stays in place as a permanent interior and exterior substrate for walls, floors, and roofs. The forms are dry-stacked (without mortar) and filled with concrete. The units lock together somewhat like Lego bricks and create a form for the structural walls or floors of a building. ICF construction has become commonplace in the U.S. and parts of Europe for both low rise commercial and high performance residential construction, particularly as more stringent energy efficiency and natural disaster resistant building codes are adopted.

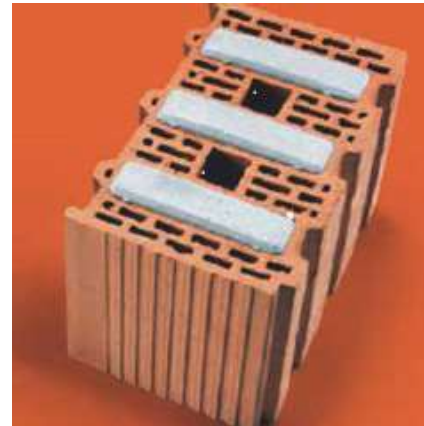
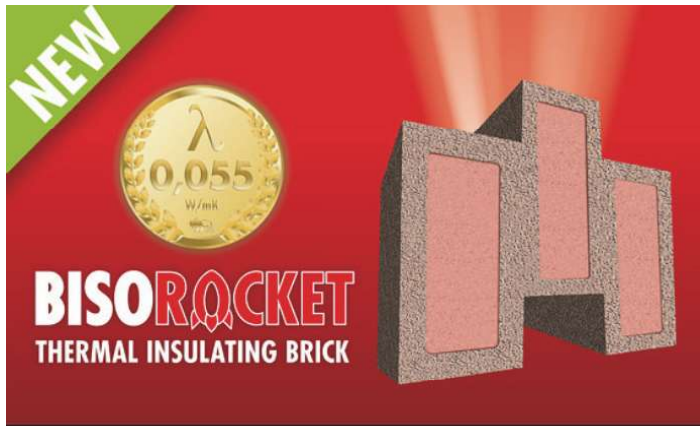
EXHIBIT 1 HOW LEGO BLOCKS STACK



Insulating concrete form products have been gaining popularity with builders, manufacturers, and suppliers, since the product concept has many significant advantages. Notably, ICF products are energy efficient, strong, have low rates of acoustic absorption, provide superior fire protection (the polyurethane foam is separated from the building interior by a thermal barrier regardless of the fire barrier provided by the central concrete), have superior air quality (ICF walls mitigate the potential for mold and facilitate a more comfortable interior while maintaining high thermal performance), are more environmentally sensitive (ICF walls can be made with a variety of recycled materials that can minimize the environmental impact of a building) and provide superior protection from vermin (because the entire interior space of ICF walls is fully filled, they pose more difficulty for casual transit by insects and vermin).

Examples of variants of the ICF product as marketed in the United States are shown below:

**EXHIBIT 2
EXAMPLES OF ICF PRODUCTS**



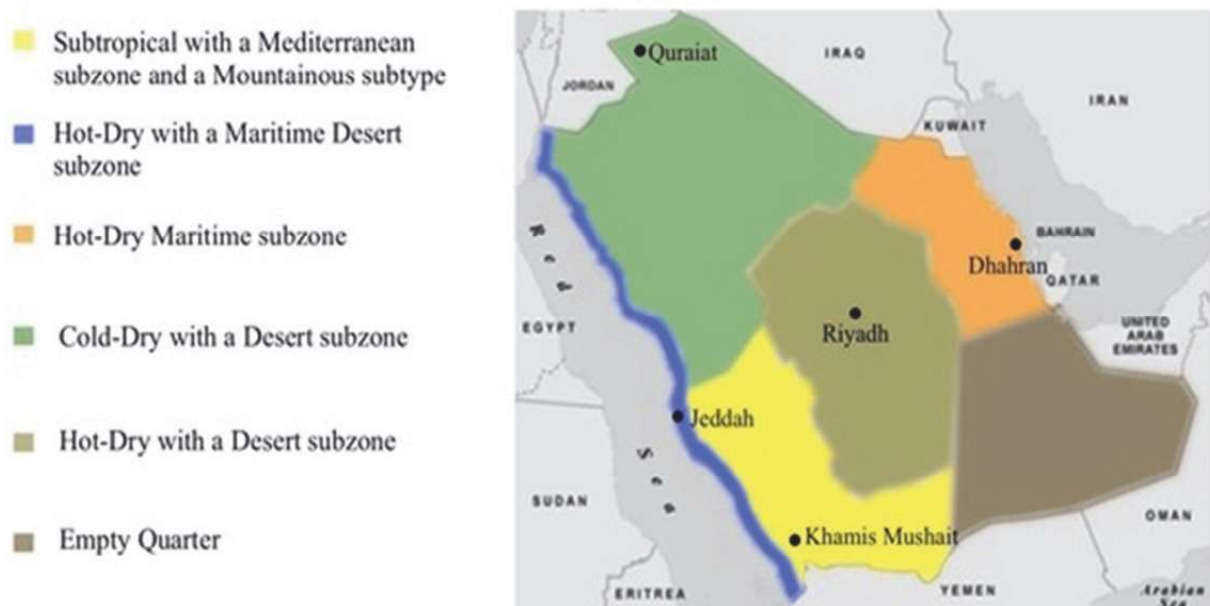
Al-Saud considered establishing a manufacturing and marketing capability to supply this relatively new type of building material in Saudi Arabia. The product could potentially have major competitive advantages in that market.

POTENTIAL MARKET

Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia (KSA), a nation in the Middle East bordering the Persian Gulf and Red Sea, is a large country with an area of 830,000 square miles and a land elevation that varies from sea level to nearly 10,000 feet. With such a large land area and variation of elevation, different parts of the country have distinctive climatic features, as are clearly noticeable in day to day life. The country is classified into six climatic zones.

**EXHIBIT 3
CLIMATIC ZONES IN SAUDI ARABIA**



Extensive coastlines provide leverage on shipping, especially crude oil, through the Persian Gulf and Suez Canal. Neighboring countries include Iraq, Jordan, Kuwait, Oman, Qatar, United Arab Emirates, and Yemen. The geography of Saudi Arabia is primarily desert with rugged mountains in the southwest. Saudi Arabia is a member of the Arab League (Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen) and the Gulf Cooperation Council (Saudi Arabia, Kuwait, UAE, Qatar, Bahrain and Oman).

Saudi Government

Saudi Arabia is a monarchy ruled by the Āl Saʿūd, a family whose status was established by its close ties with and support for the Wahhābī religious establishment. Islamic law, the Sharīʿah, is the primary source of legislation, but the actual promulgation of legislation and implementation of policy is often mitigated by more mundane factors, such as political expediency, the inner politics of the ruling family, and the influence of intertribal politics, which to this day remain strong in the modern kingdom.

The kingdom has never had a written constitution, although in 1992 the king issued a document known as the Basic Law of Government, which provides guidelines for how the government is to be run and sets forth the rights and responsibilities of citizens. The king combines legislative, executive, and judicial functions. As prime minister, he presides over the Council of Ministers (Majlis al-Wuzarāʾ). The council is responsible for such executive and administrative matters as foreign and domestic policy, defense, finance, health, and education, which it administers through numerous separate agencies. Appointment to and dismissal from the council are prerogatives of the king. The Basic Law of Government paved the way in 1993 for the establishment of a new quasi-legislative body, the Consultative Council (Majlis al-Shūrā), which includes many technical experts; all members are appointed by the king. The Consultative Council has the power to draft legislation and, along with the Council of Ministers, promote it for the king's approval.

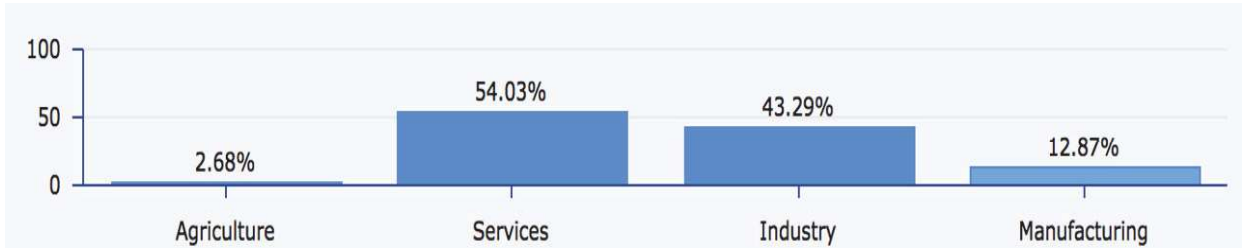
In the end, however, all major policy decisions are made outside these formal apparatuses. Decisions are made through a consensus of opinion that is sought primarily within the royal family (comprising the numerous descendants of the kingdom's founder, Ibn Saʿūd), many of whom hold sensitive government posts. Likewise, the views of important members of the *'ulamā'* (religious scholars), leading tribal sheikhs, and heads of prominent commercial families are considered.

The kingdom is divided into 13 administrative regions (*manāṭiq*), which in turn are divided into numerous districts. Regional governors are appointed, usually from the royal family, and preside over one or more municipal councils, half of whose members are appointed, and half are elected. With their councils, the governors are responsible for such functions as finance, health, education, agriculture, and municipalities. The consultative principle operates at all levels of government, including the government of villages and tribes.

Economy

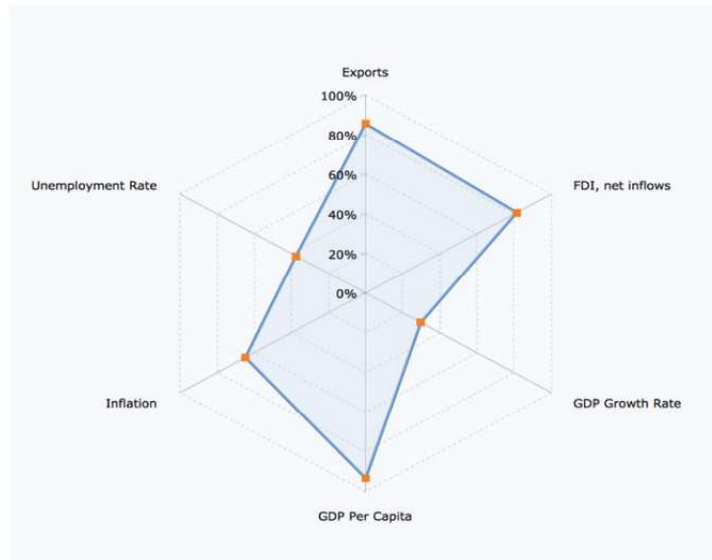
The economy of Kingdom of Saudi Arabia is significant. Key statistics are as follows for year 2016: GDP: \$1.7 billion, GDP growth rate per year 1.74% and GDP per capita \$54,417; Exhibits 4, 5 and 6 show the broad composition of the various economic sectors, along with economic indicators and labor participation in the economic sectors.

**EXHIBIT 4
GDP COMPOSITION OF SAUDI ARABIA**



Saudi Arabia is characterized as a high income but developing country. It is the world’s largest petroleum exporter. Top exported goods, in addition to oil and mineral fuels include plastics and organic chemicals. Top trade partners include China, the US, and the UAE.

**EXHIBIT 5
ECONOMY OF SAUDI ARABIA**



**EXHIBIT 6
LABOR FORCE IN SAUDI ARABIA**

Labor Force, Total	13,833,935 (2017)
Employment in Agriculture (% of total employment)	5.9% (2017)
Employment in Industry (% of total employment)	22.7% (2017)
Employment in Services (% of total employment)	71.4% (2017)
Unemployment Rate	5.5% (2017)

Fueled by enormous revenues from oil exports, the economy boomed during the 1970s and '80s. Unlike most developing countries, Saudi Arabia had an abundance of capital, and vast development projects sprung up that turned the once underdeveloped country into a modern state. During that time, unemployment was all but nonexistent - large numbers of foreign workers were imported to do the most menial and the most highly technical tasks - and per capita income and GDP per capita were among the highest in the non-Western world.

Long-range economic development has been directed through a series of 5-year plans. The first two five-year plans (1970–75 and 1976–80) established most of the country's basic transport and communications facilities.

Subsequent plans sought to diversify the economy; to increase domestic food production; to improve education, vocational training, and health services; and to further improve communications routes between the different regions of the country. But the economic boom was not without a price. As world oil prices stagnated in the 1990s, government policies encouraging larger families led to a marked increase in population. GDP per capita began to fall in real terms, and the kingdom's young, highly educated workforce began to face high rates of unemployment and underemployment for the first time. However, those trends reversed as oil prices again rose. In addition, five-year plans were directed toward increasing the share of private enterprise in the economy in an effort to move away from dependence on oil exports and to generate jobs. Approximately three-fourths of government revenues are derived from the proceeds of oil exports. Remaining revenues are raised through tariffs, licensing fees, and the proceeds of government investments. Foreign companies are required to pay an income tax, but exemptions are often granted. Saudi citizens are required to pay the *zakat* an obligatory tax on Muslims that is used to help the less fortunate in society.

Enormous oil wealth has fueled huge and rapid investment in Saudi Arabia's infrastructure. Many citizens have benefited from this growth, but it also has supported lavish lifestyles for ruling families, and religious conservatives and liberal democrats alike have accused the family of squandering and mishandling the country's wealth. Saudi Arabia's petroleum wealth has also wrought irreversible domestic changes—educational and social as well as economic. Modern methods of production have been superimposed on a traditional society by the introduction of millions of foreign workers and by the employment of hundreds of thousands of Saudis in nontraditional jobs. In addition, tens of thousands of Saudi students have studied abroad, mostly in the United States. Television, radio, and the Internet have become common media of communication and education, and highways and airways have replaced traditional means of transportation.

Population

Saudi Arabia, once a country of small cities and towns, has become increasingly urban; traditional centers such as Jiddah, Mecca, and Medina have grown into large cities, and the capital, Riyadh, a former oasis town, has grown into a modern metropolis. The total population in 2018 was estimated to be 28,571,770 with immigrants making up about 37% of the total population. A major demographic theme since the early 20th century has been the government's policy of settling the Bedouin. This practice has largely been successful, though sedentary Bedouin remain strongly attached to their tribal affiliation. This has resulted in a high demand for additional residential construction.

A second major theme has been an influx of foreign workers (first foreign Arabs and later workers from other regions) since the 1950s; no exact numbers are available, but it is generally agreed that these foreign workers are numbered in the millions. Most of these have been unskilled or semiskilled workers from other parts of the Middle East and from South Asia, while Westerners, particularly Americans, have filled the most highly skilled positions in the country. Workers in Saudi Arabia have few legal rights, and they are not permitted to organize and do not have the right to strike. Some Arabs, particularly early arrivals, have been naturalized, but most others are temporary, though often long-term residents. Moreover, most of these are unaccompanied males who have left their families in their native land; this situation is particularly true for lower-paid workers. Although a large numbers of Saudi citizens travel

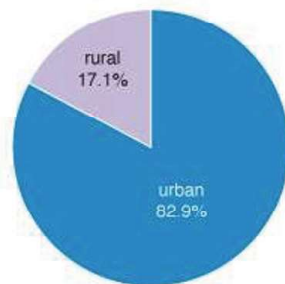
abroad for school or holiday, the number of those settling abroad is relatively small. This has also spurred demand for additional residential construction.

Rapid population growth since the late 20th century has increased the number of native Saudis entering the labor force. Beginning in the 1990s, the government responded by encouraging a policy of “Saudi-ization” (in which employers were required to hire fewer migrant workers), but highly educated young Saudis seemed unwilling to engage in occupations that had been traditionally filled by expatriates and were therefore considered menial. Female citizens traditionally have had limited employment opportunities outside the home, with most occupations being restricted to men. Many foreign women have been employed as domestic servants.

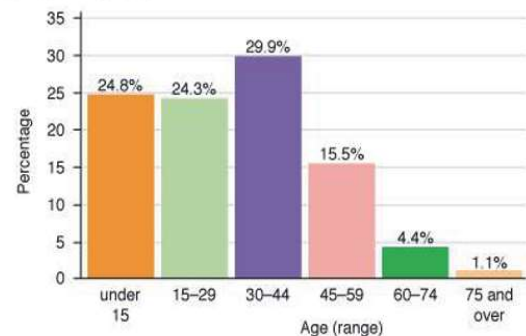
Thanks partly to the government’s policies promoting large families and partly to its large investment in health care, the country’s birth rate is well above the world average. The national death rate is markedly below the world standard. As a result, Saudi Arabia’s overall rate of natural increase is more than twice the world average, and its population is young, with roughly half under 30 years old and about one-fourth younger than 15. Life expectancy averages about 75 years. Exhibit 7 provides the demographic break down of the population per Encyclopedia Britannica.

EXHIBIT 7 DEMOGRAPHICS

Urban-rural (2014)



Age breakdown (2016)



Important Current Events and the Emergence of Mohammed bin Salman

In 2017, King Salman bin Abdul-Aziz Al Saud promoted Mohammed bin Salman (often referred to as MBS – see Exhibit 8), his youngest son, to crown prince. At the same time, the king ended the career of his nephew, 57-year-old Mohammed bin Nayef, the previous crown prince, who had served as interior minister since 2015. MBS who took on Nayef’s old job as interior minister, was relatively unknown in the kingdom when his father came to power 2 1/2 years before. He has since amassed vast powers, serving as defense minister, overseeing the state oil monopoly and working to overhaul the Saudi economy in the face of a dramatic drop in oil prices. Young Saudis eager for change see the new crown prince as a modernizer and celebrated the surprise announcement on social media. For an older generation, Saudi television coverage was highly orchestrated, with repeated footage of Nayef, the deposed crown prince, pledging allegiance to his successor. The young prince Salman is largely celebrated by younger Saudis but is regarded with suspicion by older conservatives. For example, in 2017 he said Saudi Arabia will return to a “moderate Islam ... open to all religions and to the world” from the conservative version imposed in the wake of the revolution in Iran in 1979. However, rights groups including Human Rights Watch have accused Salman of ordering the politically motivated arrests of dozens of religious figures and activists to consolidate his power.

EXHIBIT 8 MOHAMMED BIN SALMAN



With his influence, the government continues to pursue economic reform and diversification and promotes foreign investment. He is encouraging the growth of the private sector to diversify its economy and to employ more Saudi nationals. However, the government is struggling to reduce unemployment particularly its large youth population, which generally lacks the education and technical skills that the private sector needs. The country is a party to many environmental initiatives, including Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Endangered Species, Hazardous Wastes, Marine Dumping, Ozone Layer Protection and Ship Pollution, among others.

MBS oversees defense and the economy and has pledged to reduce his country's reliance on oil through diversification, including partially privatizing Saudi Aramco, the state oil company. Salman has pledged to modernize the Saudi economy and social structure. He plans to wean the kingdom off an oil economy. His radical proposals, outlined in a program labeled Vision 2030, aim to diversify the economy, with a bigger role for women and a partial privatizing of the Saudi state oil company. The plans include ending popular subsidies for gasoline, electricity and water, which changes the contract between Saudi citizens and the government and comes with some political peril. A corresponding objective is to reduce the consumption of petroleum-based products at home, creating the need to energy conservation and alternative energy sources, including plans for one of the world's largest solar farms. He also plans to increase housing available to Saudi citizens and guest workers, which will be supported by massive government grants in the construction industry.

As an example of his desire to modify the economy, Salman ordered a sweeping anti-corruption crackdown in 2017, that resulted in detaining (at the five-star Ritz-Carlton hotel) at least eleven Saudi princes, including Prince Alwaleed bin Tala — one of the world's wealthiest men — and dozens of ministers. Authorities said about 380 people were subpoenaed in total. Dozens of VIPs were detained in the capital of Riyadh for up to three months. Some were released due to lack of evidence, while others were freed after admitting to corruption and paying settlements. Saudi Arabia said in January 2018 that it recovered more than \$107 billion from the people it arrested.

As an example of modernization urged by MBS, the Kingdom announced that Saudi women will now be able to legally drive. Prior to this, Saudi Arabia was the only country where women were not permitted to legally drive. The prince is also pushing women to play a larger role in the economy. Authorities announced recently that Saudi women with postgraduate degrees will be allowed to work in the justice ministry. As an example of the impact of these changes, sales of high-end cosmetic products have soared as Saudi women now feel comfortable wearing cosmetics in public. Interestingly, starting in 2018, Saudi women could enter sports stadiums, which they were prohibited to do. These changes have not without controversy. Human rights groups have been vocally critical of his leadership and the shortfalls of his

reform program, citing a rising number of detentions of human rights activists. Then, in October 2018 the Saudi government, and implicitly Salman, were implicated in the killing of Saudi expatriate Jamal Khashoggi in Turkey. Salman has also been influential in his role as defense minister. Saudi Arabia and neighbor Iran are bitter rivals who support opposing sides in the civil wars in Yemen and Syria. Salman defended Saudi bombings in Yemen that have killed thousands of people, saying that Iran-backed rebels known as Houthis have launched missiles aimed at Riyadh. He has been criticized for his country's involvement in the war in Yemen that the United Nations says has killed at least 10,000 people. That military campaign has caused a major humanitarian disaster, including widespread famine. In 2017, Saudi Arabia, the United Arab Emirates, Egypt and Bahrain cut trade and diplomatic ties with Qatar, accusing it of destabilizing the region by supporting terrorists, which Qatar has denied. Saudi Arabia permanently closed its only land border with that country in December 2017.

Housing in Saudi Arabia

The largest cities are cosmopolitan in character, and some are associated with a dominant functions Mecca and Medina are religious, Riyadh is political and administrative, and Jeddah is commercial. Saudi Arabia's residential sector is set to experience a strong growth in the future as the Saudi population is rising at a rate of 2.5% per year, and only 24% of the Saudi nationals have their own homes. Estimates also suggested that around two-thirds of the population are under the age of 30 years. To meet the needs of the constantly growing population, the country needs to build 230,000 new homes annually through to 2020. Currently, the Ministry of Housing is planning to build 500,000 housing units in the major cities of Saudi Arabia. The residential sector in Saudi Arabia is responsible for 50% of the total national electricity consumption. Therefore, it is essential to apply sustainable energy concepts in housing sector of the economy and lower the electricity demand.

Over the last few decades, the life style of Saudi nationals has substantially changed, transforming from Bedouinism (desert life) to modern urbanism, affecting the nature of their dwellings. The housing in Saudi Arabia has dramatically transferred from tents and shelters to more permanent housing. Traditionally, architectural techniques such as wind towers, courtyards, and fountains were used for cooling and lighting; typical dwellings had thick walls, floors and roofs for better thermal performance. Housing units were constructed from local materials that were produced in situ, such as clay (adobe), limestone, coral, stone and wood. Adobe is a construction material that used to be widely used in the Saudi Arabian buildings, because of its local availability and its ability to protect from the outside weather. Houses built with adobe construction materials have stood the test of time: there are examples of such buildings that are more than 500 years old. However, with the introduction of concrete and steel building materials, the use of adobe has largely disappeared, despite studies showing that it has superior thermal properties compared to concrete and steel-based structures.

In recent times, energy-intensive heating, ventilating and air conditioning (HVAC) systems have led to a move away from sustainable building features, and much of the architectural knowledge built up over the previous centuries appears to have been forgotten. Typically, modern houses have thinner walls and roofs and are made mostly from hollow blocks and reinforced concrete. Consequently, these buildings are mainly dependent on HVAC systems that consume massive amounts of energy.

Because of the kingdom's geographic diversity, a wide variety of traditional housing types were embraced. These ranged from the conventional black tents of the Bedouin and mud-brick dwellings of agrarian villages to the lofty, ornate townhouses found in urban centers along the coast. Since the advent of oil wealth, the government has invested heavily in housing construction. It provides low-interest or interest-free loans to citizens wishing to purchase or build homes. Homes in newer areas are equipped with standard utilities (such as water, sewerage, and electricity) as well as many technical conveniences, such as Internet access and cable and satellite television. Towns in some rural areas, however, remain far removed from power and water networks. Examples of typical Saudi housing are shown below in Exhibit 9.

EXHIBIT 9 EXAMPLES OF HOUSING IN SAUDI ARABIA



In Saudi Arabia, 40% of the total energy is used by utilities (electricity and water), and 53% of this primary energy is consumed in the residential sector due to the significant use of air conditioning to cool indoor spaces. This means that residential buildings account for more than half of all delivered energy consumption across the country and can be regarded as major contributors to carbon dioxide emissions arising from the combustion of fossil-based fuels.

The rapid urbanization in Saudi Arabia in addition to the availability of cheap heating and cooling energy has resulted in an abundance of buildings with semi-transparent to fully glazed facades, which rely completely on extensive mechanical air conditioning dependent on low cost, fossil fuel derived electricity. The development and implementation of building codes and standards should be one of the highest priorities to help reduce energy use and increase energy efficiency in buildings. Reflecting on the current energy regulations and the local green building codes and rating systems, it is apparent that the GCC countries have adopted a more pro-active approach toward environmental issues that started to set a trend amongst decision makers and developers in the region.

The World Energy Challenge and Housing

The world faces a string of serious energy and environmental challenges. Fossil fuel reserves, presently contributing to over 80% of the world's total primary energy consumption, for example, are declining; the demand for energy is on a steep rise; and energy prices are fluctuating and rising. The global primary energy consumption is reported to have increased by 29% from 2000 to 2010 and is forecasted to see a further 20% jump by 2020. While there are growing concerns about the security of energy supplies, environmental security is also one of the biggest threats for the planet. The global energy and environmental scenarios are closely interlinked; the problems with the supply and use of energy are related to wider environmental issues, including global warming.

Buildings and the construction industry have a strong interaction with the global energy and environmental scenarios. Buildings are responsible for more than 40% of global energy consumption and over a third of the total global greenhouse gas (GHG) emissions. A building uses energy throughout its life (i.e., from its construction to its demolition). The demand for energy in buildings in their life cycle is both direct and indirect. Direct energy is used for construction, operation, renovation and demolition in a building; whereas indirect energy is consumed by a building to produce material used in its construction and technical installations. Given the crucial role buildings can play towards mitigating the energy and environmental issues, the application of energy-efficient and sustainable buildings has received significant attention across the world especially in the residential sector. The residential sector represents 26% and 17% of world energy consumption and carbon dioxide, respectively. Many forms of sustainable residential buildings, such as Low-energy homes, zero-energy homes, passive houses and plus-energy homes, are being developed across the world, as can be reflected through the number of buildings going

for sustainability certification. For instance, the worldwide number of buildings certified by the Leadership in Energy and Environmental Design (LEED) has exceeded 70,000. In Europe, the Building Research Establishment Environmental Assessment Methodology (BREEAM) has reported more than 8500 projects that have been assessed and certified. Furthermore, in Australia, the number of projects that were assessed and certified by Green Star is 993. Furthermore, there are currently more than 450 buildings in Japan that were certified by the Comprehensive Assessment System for Built Environment Efficiency (CASBEE).

Construction Practices in Saudi Arabia

In typical construction of Saudi Arabian buildings, be it residential or commercial, concrete blocks are used extensively. This form of material has served the region well by providing relatively low cost and durable building materials. Due to economic and social changes, the Saudi government is requiring stricter environmental regulations for all new buildings and the construction industry is feeling the pressure to become more environmentally and energy efficient and to utilize materials that lead to speedier construction. Under new leadership, the government is looking to establish itself as a leader in environmental issues in the Gulf region. The government has embarked on building many new residential units to address some of the social issues and favors construction schedules that are expected to be faster than normal.

According to the *Saudi Gazette*, Saudi Arabia comprises the largest construction market in the Middle East with multibillion dollar projects under way and many more in the planning stages by both the public and private sectors. Infrastructure works were expected to post a four percent growth annually through 2020. The key driver of Saudi Arabia's construction sector is the country's growing population. In 2010 the Saudi government earmarked \$385 billion for infrastructure development between 2010 and 2014. The government's continuing focus is on social requirements such as new hospitals and clinics, education as well as housing while real estate, office and shopping mall investments and tourism projects are the focus of the private sector. Most analysts feel that this infrastructure spending will continue, but recent political developments in Saudi Arabia are somewhat troubling.

Table 1 provides a relative economic comparison among the Arab Middle Eastern Countries as of the most recent data in 2016 (World Bank, 2017).

**TABLE 1
COUNTRY COMPARISONS**

Country	Per Capita GDP ppp	Population 000
Qatar	118,215	2,570
Kuwait	69,329	4,053
UAE	67,133	9,270
Saudi Arabia	50,458	32,276
Bahrain	44,658	1,425
Oman	44,508	4,425
Iraq	17,353	37,023
Lebanon	12,974	6,007
Jordan	9,050	9,456

PROPOSED BUSINESS PLAN FOR SUPERBRIK

Al-Saud felt that there were many positive factors that could lead to making SuperBrik a success in Saudi Arabia. He felt that it had potential advantages of using these types of products over adobe or regular concrete blocks that are traditionally used in Saudi Arabia, is that the ICF's two built-in layers of foam insulation provide more energy efficiency, reduce noise transmission through walls and offer better protection from vermin, sand and pollution. But, with all the useful advantages of ICF products, it was not clear how many of these will prove to be significant product attributes for the Saudi market.

To help him decide, al-Saud engaged Strategy Business Group (SBG), a local consulting company, to evaluate his ideas and propose an entry strategy to the Saudi market. The consultants at SBG were tasked with a project with seven major outcomes: Product/Service Positioning, Competitive Analysis, Logo/Branding Strategy, Online Marketing Strategy, and Sales/Pricing Strategy. Below are excerpts from the SBG consulting report.

Core Value Proposition

We feel that SuperBrik brings environmentally friendly and cost-effective building materials to the Saudi Arabian market and the greater Gulf Cooperation Council (GCC) region. This product favorably positions ICF blocks as a remedy to overcome some of the issues of concern in Saudi Arabia. Concrete masonry blocks have served the region well by providing relatively low cost and durable building materials. However, with increased pressure on the domestic construction industry for more environmentally energy efficient material and speedier construction, one can position ICF blocks as a solution to both challenges to comply with the Saudi government's requirements for stricter environmental regulations for all new housing.

Environmental/Energy Efficiency Benefits

ICF blocks addresses the environmental/energy efficiency requirement with their inherent insulating capabilities. Even when insulation is added on an after-the-fact basis for existing concrete masonry on interior walls, they still could provide an approximately 20% decrease in energy usage for heating and cooling. Additionally, the size of the cooling/heating systems themselves can be reduced because of smaller loading, thereby reducing the environmental footprint and capital costs. Moreover, because of the superior sealing property of the ICF blocks, the internal environment and comfort of the buildings are improved by preventing sand and pollutants from entering the buildings. Another resultant benefit is increased sound insulation, which is significantly higher than the traditional material. For those contractors interested in being recognized as having received green building certification, such as LEED, ICF building blocks provide up to 23 points in the "LEED for Home" ratings. Moreover, ICF brings a compelling benefit in its faster assembly time as they can be used to assemble entire walls at once, with no application of mortar or adhesive. Then, as it is assembled, the entire wall is filled with concrete at once with no interim steps. This unique process allows ICF walls to be constructed twice as fast as with the traditional materials.

Technology Supplier

Since other ICF manufacturing companies were beginning to enter the Saudi market, the choice of manufacturing equipment for the ICF blocks will be a significant factor. We have obtained the costs and technical standards of the machinery needed for ICF production from several major manufacturers across the world. These companies range from relatively new low-cost providers in China to established high-quality manufacturers in Austria (Table 2).

TABLE 2
COMPARISON OF ICF MACHINERY SUPPLIERS

ICF Machinery Supplier	Country	Cost	Quality
Fangyuan Plastic Mfg	China	\$593,200	Budget
Gaofu	China	\$775,000	Budget
Hebei Xuelong	China	\$683,000	Budget
Shanghai Zhongji	China	\$612,180	Budget
Promass	Italy	\$943,883	Mid
Hirsch Gruppe	Austria	\$1,804,701	High

As can be seen, the delivered cost per machine to produce SuperBriks varies greatly. We feel that it would be best to utilize the best possible manufacturing capability for this market. In order to provide a competitive advantage against new suppliers, we suggest selecting the Austrian company Hirsch Gruppe, even though its machinery is more expensive. The Hirsch Gruppe is an international company founded in 1972 with core experience in expandable polystyrene (EPS), a material with a wide range of applications (bicycle helmets, insulating materials, packaging materials, etc.). Hirsch's Technology Segment business unit produces high quality and flexible machinery for molding EPS into various molded parts, including ICF blocks. In addition to developing and producing the ICF machinery, Hirsch Gruppe also has a dedicated team to support "turnkey" plants. This enables the company to apply its deep experience and lessons-learned from numerous factory installations. Specifically, Hirsch has developed a mobile ICF plant that can tightly integrate the EPS processing and form tools. This plant is the fastest way to set up production facilities in Saudi Arabia. Hirsch will be able to set up the production capability quickly. In addition to maintaining a quality advantage, this will minimize the risk in setting up the production facilities in Saudi Arabia and reduce the time to market.

Market Competitive Analysis

Competitive analysis includes not only competitor evaluation and competitive advantage identification, but also country risk assessment. We recommend that the following factors be taken into consideration:

- Short- and long-term political risk
- Currency exchange fluctuations
- Increasing labor costs
- Cultural context insofar as it pertains to business contracts and hiring; and marketing and sales strategy

Create Logos, Color Scheme and Slogan Options

These findings led to the following recommendations:

Company name

In addition to SuperBrik, we suggest that the following names be evaluated to be potentially used for the company: "Greentech," "Greenbuild," "Ecobuild," "Duratech," and "Ecotech. Moreover, it is recommended that a green and gray color scheme be used to convey the environmentally friendly nature of the product.

Logo

The competitors all had very simple logos, often displaying name of the company in large letters. After several iterations and designs changes, a three-dimensional cube with an ICF block set above the ocean on the front face were suggested as an appropriate logo.

Website Design

We analyzed the web sites of existing ICF competitors in the U.S. market. The key competitors with respect to web design and content were identified as: Permacrete, Greenblock, Logix ICF, Quadlock, ICF Homes, Lite Form Technologies, and AMVIC System. We felt that this was an appropriate strategy, as the cultural differences in the Saudi market would not affect the GSICF's website contents of links, title tabs, "contact us", "about us", "history", "educational/tutorial", colors, and listed prices. Table 3 provides a summary of the major findings. Based on an analysis of competitors' websites, a web design strategy for GSICF were proposed.

TABLE 3
U.S COMPETITOR WEBSITE ANALYSIS

Company	Positives	Negatives	Recommendation for inclusion
Permacrete	Free product demonstration classes are offered as well as a ten-year limited warranty	No social media links, too many different colors are integrated	Use social media links and a sleek color scheme that does not mix too many colors
Greenblock	44 years of experience in the industry, featured construction projects	Youtube is the only social media outlet used, the press release page is outdated	Pictures and videos of ICFs and their properties, no press release page
Logix ICF	Uses multiple social media outlets, features an investor newsletter, has a concise, effective slogan	Logo is essentially the company name and not effective for branding	Slogan should be a brief power statement. For branding, request a logo that incorporates an ICF block. Implement a newsletter
Quadlock	ISO: 9001 certified, contains installation training videos and CAD drawings	The slogan does not emphasize durability or environmental sustainability	Incorporate environmental sustainability into the slogan, highlight the durable nature of ICFs on the website
ICF Homes	No prices listed to keep the competition from getting them, detailed explanation of ICF makeup	Hyperlinks instead of tabs gives an unprofessional appearance, no comparison to competitor's ICFs	Protect prices by a password, request traditional tabs for the website
LiteForm Technologies	Detailed specifications about the product offering, contributes to 4 LEED categories	Cost estimator does not work well, no logo, limited social media outlets	Instead of a cost estimator, requires a section to request information and/or a quote
Amvic System	Uses several social media sites, offers ICF flooring and hurricane-proof safe rooms with a lot of detail provided	Pictures in the architect/engineer section are small and ineffective	Request an ICF floor section, note that ICF structures are hurricane-proof, provide a clear explanation to architects/engineers of the positive qualities of ICFs

Pricing Strategy

We suggested a pricing strategy based on competitive pricing of comparable products in the market. The product pricing and the target levels selected are:

- \$22 (82 riyals) per square meter
- \$11 (41 riyals) per block, which is 0.5 square meter

We attempted to validate this pricing through surveys and other means. For example, we found that the KSA construction company Saudi Oger provided us with an estimate of total materials and labor cost for a typical residence villa as \$18.67 /m². Unfortunately, we were unable to obtain pricing data from other regional competitors, such as Saudi Nidyon, Jehan Green Walls and Plastbau Middle East, which would have allowed more thorough analysis of range of pricing for this product. The analysis indicated that \$22 per square meter, though low in comparison to North American prices, would be appropriate in comparison to those alternatives in the Middle East region. Although the main component of ICF (EPS pellets) is a global commodity, the price disparity could be explained by lower production infrastructure costs such as land, labor and energy costs and significant subsidies by the Saudi government for key production inputs. The pricing survey results are shown in Table 4. The average wholesale cost per block in the United States is \$29.48, while the best estimate of market price in Saudi Arabia is \$20 per block.

**TABLE 4
PRICING SURVEY RESULTS**

Manufacturer	Block Size	Block Cost	Cost per m ²	Sales Channel	Notes
FoxBlocks	16"x48"	\$20.48	\$41.34	On-line Retail	Menards' site
SmartBlock	12.5"x40"	\$12.95	\$40.13	On-line Retail	Home Depot
Perma-Form	unknown	unknown	\$21.41	On-line Wholesale	Direct to builder
Standard ICF	16"x48	\$15.95	\$32.20	On-line Retail	N/A
Industry Average	n/a	n/a	\$29.48	Builder Wholesale	Average of 10 survey respondents
Saudi Survey	n/a	n/a	\$20.00	Builder Wholesale	Consultant's survey results
Saudi Oger	unknown	unknown	\$18.67	unknown	Size and quality of ICF unknown
SuperBrik	various	various	\$22.00		GSICF business model assumption

We feel that the higher quality of GSICF blocks needs to be taken into account when developing the pricing model. With the selection of Hirsch Gruppe as the supplier of ICF production machinery, a premium will be paid above the cost of the low- and mid-ranged machinery suppliers. Aside from the benefits of time to market and operational reliability, the ICF blocks produced have a higher quality with tighter tolerances than the competition and therefore could provide value by requiring less time during construction.

Financial Analysis

The initial financial model with the assumption of \$22 /m² price indicates that there will be a relatively low profit margin on this undertaking considering the risks and the level of support needed to implement the project. The profit margin in Year 1 is only 8%, increasing to 16% in Year 2, but then declining to 13% in Year 3. This low profit margin points to a need to increase the prices or lowering costs by improving productivity and or obtaining subsidies from the Saudi government. However, a

revised financial model was evaluated based on nominal \$22 /m² targeted price and revenue of \$103 /m² of building floor area (not area of the ICF walls themselves). A typical house was assumed to contain 0.21 m² of wall area for every 1 m² of floor area. The revised model yields a profit margin of 48% in the first year, with subsequent years ranging between 49% and 52%. Given this improved profitability, a nominal price of \$22 /m² is determined to be the correct pricing.

Marketing and Sales Strategy

We conducted a survey with seventeen architects, developers and building professionals in Saudi Arabia. Those surveyed consisted of personal contacts who were able to answer questions regarding not only ICF but also the building industry in Saudi Arabia. Due to the very specific nature of the survey, subjects and questions, solicitation was limited to these known personal individuals and, therefore, with understandable biases. However, the survey results were nevertheless informative. Seventeen unique responses were received; eleven of these respondents answered every question and six answered at least some. In general, the results showed that typical clients in this industry were developers or the government and clients were more likely to specify building materials. Respondents seemed well informed on current building trends and materials. As expected, the results showed that respondents were much more likely to use ICFs if they were able to save in material and labor costs.

The proposed sales model for SuperBrik is rather unique for geographic as well as logistical reasons. The Saudi Arabian business environment is heavily reliant on relationships and it is especially important for the government officials, when making funding decisions, to deal with entities that have physical presence in the country. However, we understand that the proprietor of SuperBrik wishes to continue maintaining his primary residence and business headquarters in California while overseeing the business in Saudi Arabia. To undertake and manage the sales activity, a sales force control system was proposed to be put in place. The sales representative/staff would have to maintain a residence in Saudi Arabia and must be readily available to manage clients' day to day operations – this sales position is crucial to the success of the SuperBrik's project, given the rapid growth rate that GSICF wanted to achieve in the Saudi building industry. For ease of transition and considering cultural imperatives, it was recommended that the sales team to consist only of men. They would be selected from Australia, Germany, or Britain as well as several local Saudis. The sales staff compensation was suggested to be a combination of a monthly salary and a generous commission plan.

There are many trade shows/exhibits that are relevant to SuperBrik. It was recommended that the company plan to have a presence at these events, to meet new customers, learn about the competition and assess market trends.

DECISION TIME

Al-Saud now had to decide whether to proceed with his idea, which involved having to raise a significant amount of capital. As part of this decision, he needed to decide many things. One major concern was assessment of the potential market. Which of these factors should be considered: potential demand, political risk, government influences and economic risk? What are some major cultural differences that a new venture such as SuperBrik would need to consider when doing business in Saudi Arabia? What does the emergence of Mohammad bin Salman portend for SuperBrik (i.e., what is the impact)? What would a SWOT analysis for SuperBrik in Saudi Arabia tell him?

ACKNOWLEDGMENT

We would like to recognize the dedicated work by Briana Henscheid, Jeff Cadena, Alan Greubel, and Genelle Kunst who participated in the data gathering, analysis and earlier drafts of this case study under the supervision of the authors and Margo Poda who gathered and wrote the early draft of the background information on Saudi Arabia and its market.

REFERENCES

- Business Environment Outlook - Q1 2012. (2011, October 26). *Business Monitor Online*.
- Central Intelligence Agency. (2017, October 13). The world factbook: Saudi Arabia. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/sa.html>
- Darmon, R. (2011). A New Conceptual Framework of Sales Force Control Systems. *Journal of Personal Selling & Sales Management*, 297-310.
- Gajda, J. (2001). *Energy use of Single-Family Houses With Various Exteriors*. Portland Cement Association.
- Khan, S. A. (2011). *KSA Leads Construction Boom in Region*. Retrieved September 5, 2011, from The Saudi Gazette <http://www.saudigazette.com.sa/index.cfm?method=home.regcon&contentID=20110905108290>
- LEED for Homes Rating System. (2008). U.S. Green Building Council.
- Lehrer, A. (1988, Summer). A Note on the Semantics of -ist and -ism. *American Speech*, 181-185. *Overview of*
- HIRSCH Gruppe. (2011). Retrieved October 28, 2011, from Hirsch Gruppe [gruppe.com/homepage/com/unternehmen/die_hirsch_servo_gruppe.php?navtext=Overview of the HIRSCH Servo Group](http://gruppe.com/homepage/com/unternehmen/die_hirsch_servo_gruppe.php?navtext=Overview%20of%20the%20HIRSCH%20Servo%20Group)
- Pearl Building Rating System: Design & Construction, Version 1.0*. (2010). Abu Dhabi Urban Planning Council.
- Political Risk Analysis - Crown Prince's Death Highlights Succession Risk. (2011, October 24). *Business Monitor Online*.
- Raafat, F., & Sciglimpaglia, D. (2018). Superbrik: Introducing An Innovative Building Product To The Saudi Arabian Market. *Proceeding Forty Seventh Annual Meeting of Western Decision Sciences Institute*, April 3-7, 2018, Kauai, HI. <http://wdsinet.org/AnnualMeetings/2018Proceedings/>
- Raafat, F., & Sciglimpaglia, D. (2015). Situation Analysis for a Start-up Company in Saudi Arabia. *Proceeding of The 27th Annual CSU-POM Conference*, 78-89, February 28, 2015.
- Saudi allocates \$67bn for housing and healthcare. (2011, March 20). Retrieved October 1, 2011, from Construction Week Online <http://www.constructionweekonline.com/article-11469-saudi-allocates-67bn-for-housing-and-healthcare/>
- Saudi power sector moves to privatization. (2011, June 15). Retrieved October 5, 2011, from Megawhat, Who, Where, When, Why & How of the Power Industry <http://www.megawhatme.com/en/2011/06/saudi-power-sector-moves-towards-privatisation/>
- Ware, C. (2011). *Know the Real Competition: Specifying ICF over CMU*. Retrieved September 15, 2011, from ICF Builder Magazine: http://www.icfmag.com/articles/features/icf_over_cmu.html
- World Bank (October 13, 2017). GDP per capita, PPP (current international \$), various countries. Retrieved from <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=SA>