

# MILITARY SELF-RELIANCE IN THE GCC

FROM PURCHASING POWER TO  
INDUSTRY POWERHOUSE

## AUTHOR

Anshu Vats, Partner  
Mark Serrano, Principal



# INTRODUCTION

Member countries of the Gulf Cooperation Council (GCC) need to become more resilient in the face of a geopolitical environment that has grown much more challenging in recent years. An important component of the GCC's resilience in security going forward shall be self-reliance in its defense industry. Until now, almost all of the billions of dollars spent on arms have gone to foreign suppliers. In the future, the GCC must focus on developing a domestic base of defense manufacturing to enhance the region's capability to address a range of conventional and asymmetrical threats ranging from terrorists, cyber attackers, among others.

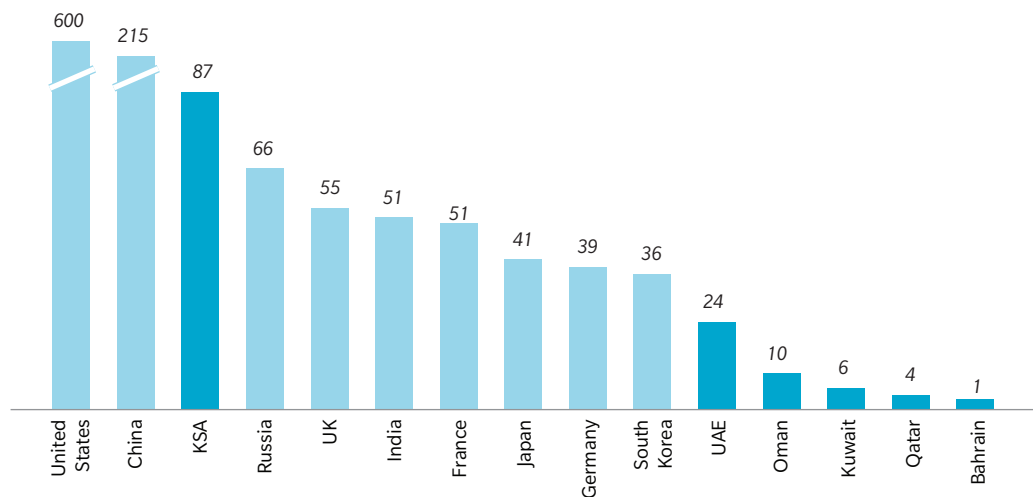
This will require a new vision for each country's defense policy, focused on domestically building unmanned aerial vehicles, computer and communications systems and other strategic capabilities. These changes will reshape the GCC's security posture to rely less on foreign suppliers and more on the homegrown capabilities of local defense industry champions. All this cannot happen overnight, but if the GCC makes a concerted effort to move in this new direction, in ten years it will have transformed its defense capability and its relationship with friends and foes.

# HARNESSING THE OPPORTUNITY IN TODAY'S UNCERTAIN TIMES

The six countries of the Gulf Cooperation Council (GCC) are, as a group, the world's third largest spenders on defense, with a combined budget of more than US\$100 billion a year. This considerable purchasing power must now be converted into industrial power. Domestic defense production remains an insignificant share of GDP, despite strong efforts to localize since the 1980's. A dramatically new approach is needed if the GCC arms manufacturers are to become economic and security game-changers.

## Exhibit 1: GCC defense spending

GCC DEFENSE EXPENDITURES  
IN US\$ BN, 2015



Source: SIPRI, Strategic Defense Intelligence, Oliver Wyman estimates

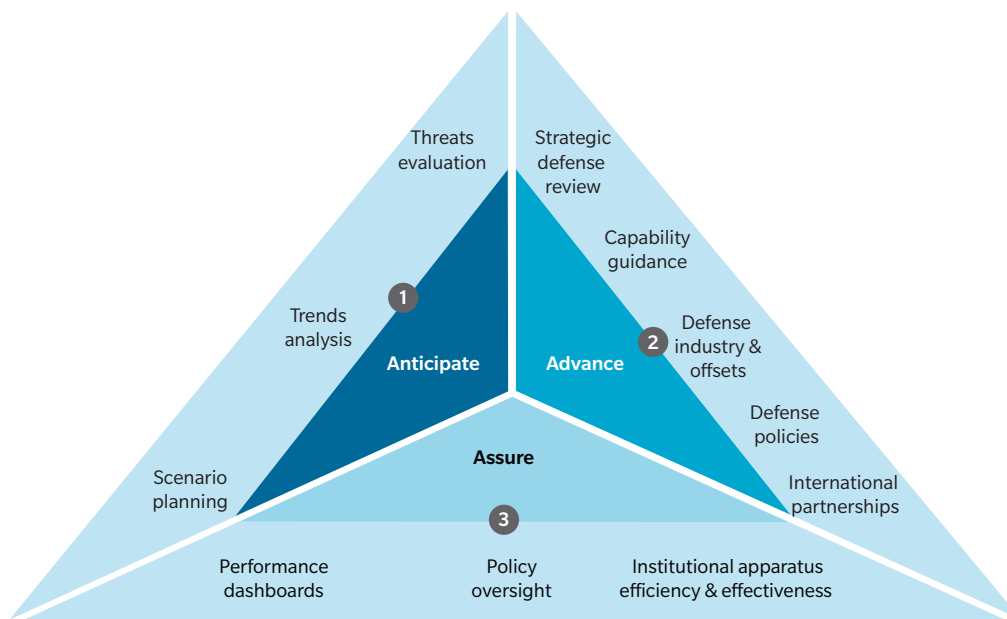
The Middle East's biggest defense suppliers such as the United States and the United Kingdom have encountered abrupt, political swings that place a significant degree of uncertainty as to these countries' defense and foreign policies in light of a wave of recent, improbable changes in national direction. Long held policies and agreements related to the overall security of the region are now being re-assessed by all stakeholders involved. This geopolitical climate creates a number of potential scenarios where the export of military equipment, platforms and systems can potentially be limited, if not curtailed; where the legacy level of military cooperation and regional protection can be gradually withdrawn; and where GCC countries must now plan for self-sufficiency in its defense and security as the only reliable way forward.

Today's uncertain times provide the backdrop and perhaps the impetus required for GCC countries to accelerate and enhance the effectiveness of their own localization programs. A number of challenges must be overcome through a structured approach that is highlighted in this report. GCC countries, if successful, are well positioned to harness their collective purchasing power on defense and can transform their domestic defense industries into more effective ecosystems as those found in Korea, Turkey, India and China. In addition, the economic development impact cannot be ignored. A thriving local defense industry shall provide another growth pillar as GCC countries shift their economic bases away from oil and gas industries. This shall provide a new source of highly skilled jobs, GDP growth and non-oil export revenues. There are already signs of change. Saudi Arabia's Vision 2030, published in April 2016, has identified the defense industry as a priority for development – aiming to localize over 50 percent of the Kingdom's military equipment spending by 2030, 25 times more than the level today. Its neighbors have taken note.

This report outlines the significant steps the GCC must take to localize the defense industry. To do this, Oliver Wyman introduces its Triple A Framework – “Anticipate, Advance, Assure” – to offer policymakers a way to create a roadmap for the defense industry that is sustainable under a range of geopolitical scenarios.

## Exhibit 2: The Triple A Framework

OUR APPROACH TO DEFENSE – ANTICIPATE, ADVANCE AND ASSURE (“TRIPLE A”)



### 1 Anticipate

- Methodical approach to framing uncertainty
- Specific insights as input to defense policies that go beyond ambiguities
- More robust perspectives & planning by involving multiple stakeholders

### 2 Advance

- Structured approach to assess capabilities & identify gaps
- Alignment of defense investment with required strategic outcomes
- Pursuit of capability development through localization & use of international alliances

### 3 Assure

- Transparency of performance & progress toward outcomes
- Enhanced agility & effectiveness through leaner, best-in-class operations of defense

# ANTICIPATE

## TO HELP ANSWER THE QUESTION OF WHAT SET OF CAPABILITIES MUST BE LOCALISED

By evaluating changing threats to the region and analyzing social, political and economic trends, the GCC countries can develop different scenarios that will determine the military capabilities they require. Trends in warfare are shifting away from conventional arms and in favor of asymmetric capabilities, such as Unmanned Aerial Vehicles (UAVs), Cyber Defense and Special Forces. This creates an opportunity for GCC countries because the technological and human resources suited for these purposes are less onerous than designing and making a strike aircraft or a missile system, yet still requiring deep expertise that must be upgraded rapidly to capture the opportunities.

Through “Anticipate”, the GCC can adopt a forward-looking view, cognizant of key global, regional and domestic trends, to identify and prioritize capabilities to localize. As an example, fiscal pressures and the balance with maintaining a credible aerial capability may lead the GCC to prioritize UAV’s over conventional aircraft. Building a credible deterrent in asymmetric warfare is considerably less costly than for conventional weapons. The Typhoon Eurofighter, for example, bought by KSA and Kuwait, costs about US\$140 million each. By contrast, US military drones, such as the Reaper, cost less than a tenth as much, and the US Air Force wants to develop models that are considerably cheaper and more effective. Drones also require fewer trained people to operate them.

Cyber threats are real and have materialized in the GCC. The “Shamoon” cyber-attack on Saudi Aramco in 2012 demonstrated the vulnerability of critical assets and infrastructure, highlighting the need to enhance cybersecurity capabilities. A similar incident occurred shortly in Qatar’s RasGas. The extent of damage then provides a reminder on how lethal a similar incident can be when inflicted on other critical infrastructure or organization, public or private, which may not have sufficient cyber defense capabilities.

Risks of conflict from large scale warfare have now shifted to increased risks from asymmetrical threats from non-state actors. As a result, Special Forces may be prioritized further. The anti-terrorist US Special Operations Command employs just 4% of the total number of men and women in the US Armed Forces. An equivalent force for the entire GCC would total less than 15,000. Developing capabilities of a more manageable size suits the realities of manpower constraints among nationals in the region. This allows GCC nations to focus its spending to best organize, equip and train, Special Forces with targeted capabilities most relevant to GCC needs such as counter-terrorism.

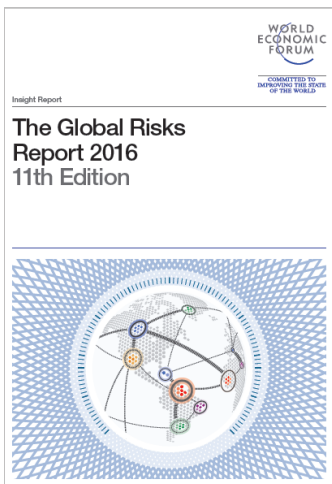
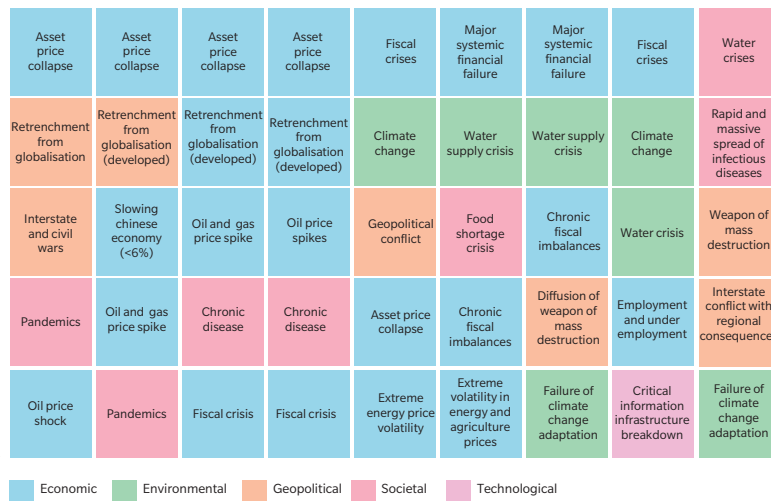
There are, however, significant challenges. An asymmetrical defense capability to deter enemies would require sophisticated systems integration and state-of-the-art command, control and communications capabilities. GCC countries would have to build the skills to operate and maintain unmanned aerial vehicles, conduct cyber warfare, design software and build drones. These are tall hurdles, but they are not insurmountable, given the right policies. The GCC would also reap multiple benefits for economies that need to become more innovative and diversified, while creating good jobs for skilled nationals.

Specific tools and approaches can help GCC countries to “Anticipate”. From macro analyses of major geopolitical, social, economic and technological trends to specific assessments of threats foreseen, the objective of this step in the overall approach is to generate robustness in forming a forward looking view for the defense apparatus. Capabilities must be accessed by defense and security institutions to methodically develop such a perspective, cognizant of multiple risks, drivers and scenarios that impact a number of defense outcomes looking ahead. An example of such capability is a “risk center”, illustrated below, which combines rigorous data analytics, risk assessments and syntheses to arrive at a view of the world and the primary considerations relevant to the “Anticipate” exercise.

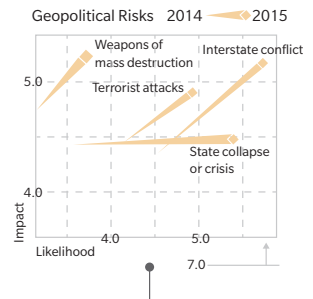
**Exhibit 3: MMC Global Risks Center: Data-driven foresight to “Anticipate”**

**“Anticipate” Key Risks and Implications**

Comprehensive view on **key risks for KSA** plotted: economic, environmental, geopolitical, societal and technological



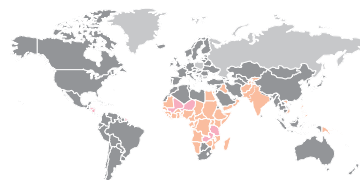
**Identifies Risk Constellations**



- I. Interplay between **geopolitics and economics**
- II. Urbanization in developing countries
- III. Governance of **emerging technologies**

**Provides insights and implications of risks on a regional/global level**

Forecasted urban population growth 2010-2050



**Urban population in 2050 compared with 2010**

- Smaller
- Larger but less than double
- Fivefold or more
- Double or more, but less than fivefold

Source: World Economic Forum, Global Risks 2016

# ADVANCE

## TO PROVIDE A FRAMEWORK ON HOW TO LOCALIZE AND DEVELOP THE DEFENSE INDUSTRY

To “Advance” defense capabilities requires a thorough understanding of the capability gaps in the security/defense apparatus. A strategic review of capabilities shall highlight key gaps that must be addressed through specific development guidance, policy interventions and international collaborations. In the prior step of “Anticipate”, priority capabilities would have been defined. In “Advance”, concrete steps to fill the gaps and enhance the targeted capabilities are made through a number of potential interventions.

A strategic plan under the direction of national leaders and their respective Ministers of Defense will aim to build a defense industry ecosystem to meet the security needs of the GCC. This strategic plan will articulate a roadmap of defense capability programs and requirements from all stakeholders. The roles and responsibilities of each stakeholder will be clarified and governance tightened, so that each category of participant will be held accountable for meeting the industrialization targets.

Successfully advancing defense capabilities of a nation requires putting together an aligned and thriving ecosystem that must be able to address the needs of both conventional warfare and asymmetric capabilities development.

Advancing conventional capabilities and localizing them effectively traditionally involved an offset policy. The GCC’s largest defense spenders: Saudi Arabia and the UAE have deployed this policy and have had varying degrees of success. Clear strategic guidance, a complete and coordinated defense industry ecosystem and required international partnerships are required to maximize the chances of effective localization. On future-oriented defense capabilities such as cybersecurity and UAV’s/drones, added considerations involve the presence of venture funding, R&D and scientific talent, supportive regulations and national institutions to integrate and coordinate efforts throughout the defense apparatus are a must.



Exhibit 4: “Advance” example: Enhancing regulations for drones (Oliver Wyman Whitepaper)



**2035**  
The year that unmanned aerial vehicles in operation in the United States should surpass the number of manned aircraft

**COMMERCIAL DRONES**  
THE UNITED STATES MUST SPEED UP GLOBALLY COMPETITIVE REGULATIONS  
GEORGES AOUDE • PETER FUCHS • GEOFF MURRAY

**2035**  
By 2035, the number of unmanned aircraft in operation in the United States should surpass the number of manned aircraft. This projection is based on current trends in drone production and usage, as well as the projected growth of the drone market. The FAA must get further. It's important for the FAA to develop the risk-based foundation for drone regulations. The goal for the purpose of unifying the US market but to guide that more heavily through regulatory issue priority.

The difference for the distinction between recreational and commercial drone activities mirrors the manned aircraft world, where commercial pilots are responsible for transporting large numbers of passengers solely for large aircraft and are held to the highest level of experience and training. Recreational pilots are held to a lower standard in terms of experience because of the lower potential for harm to the land, damage to property or humans. There is little difference whether smaller drones are used for recreational or commercial purposes, as the risks they pose are similar in both cases: the drone is uncontrolled, and the risk of damage to people, property or manned aircraft is low.

After struggling with this and other issues, the FAA found that the current aircraft framework cannot be readily applied to commercial drones. For example, the agency dropped the idea of requiring drone operators to hold pilot licenses.

**Gaps Identified as Presented in our Whitepaper:**

- Legacy regulations on commercial drones (as per FAA)
- Gap between the US and other developed countries (UK, Japan) on drone use and regulations
- Limited applicability of manned aircraft framework to unmanned aircraft/drones

**Advancing National Capabilities (on Drones):**

- Technical: adoption of risk-based, tiered approach to regulations
- Commercial: tailoring regulatory framework to allow for attractive opportunities (e.g. package delivery)
- Policy Interventions: incremental updates to rules closely tracking industry developments

Source: “Commercial Drones, The Race is On” by Georges Aoude, Peter Fuchs and Geoff Murray (C) Oliver Wyman 2015

# ASSURE

## TO MONITOR PROGRESS AND OVERSEE RESULTS THROUGH AN EFFECTIVE GOVERNANCE FRAMEWORK

To ensure the strategic plan meets its objectives of defense-industry development, the countries will assure progress toward the goals of localization and sustainability of capabilities, by measuring the speed of advance along the roadmap. Overall coordination and governance of the defense ecosystem will be overseen by a government agency that reports directly to the highest levels of leadership in the GCC.

In “Assure” it is vital to create the required information and governance architecture across all defense industry players. This approach shall allow all stakeholders to have transparency on progress and for the government to drive specific accountabilities across a number of players. Information and data exchange are critical pre-requisites to “Assure”, along with a robust tracking and reporting interface to facilitate course corrections and decision making.

### Exhibit 5: Operational governance: Applied example for “Assure”

#### GOVERNANCE AS A PRIME MECHANISM TO “ASSURE” INSTITUTIONAL OUTCOMES



- Clear framework on how decisions are made, executed and monitored
- Oversight on the translation of strategy into specific organization-wide activities and metrics/KPIs
- Ensuring effective performance management and reporting through dashboards
- Use of metrics can confirm or deny intuitive signals faced by the executive
- Similar approaches as outlined above are applied across a number of defense and security institutions – through management suite of tools or through the respective Inspector General units

Source: “Rethinking Operational Governance”, Sebastian Maire and Jerome Bouchard (C) Oliver Wyman 2015

# IMPLEMENTING A SUCCESSFUL DEFENSE INDUSTRIALIZATION PLAN – SIX KEY THEMES

If the GCC countries are to build a sustainable and vibrant industrial base for defense manufacture and systems development, they must outline: a clear set of objectives; the way they intend to achieve them; the timeline in which they plan to meet their targets. A defense industrialization plan consists of six important elements: strong leadership from the top of each government; an efficient and effective enhanced offset program; a well-coordinated procurement strategy; well structured back-to-back OEM contracts; clear targets for the transfer of technology; and a plan for expanding domestic production with the eventual aim of building an export capability. Bringing these elements together, accounting for specific requirements of both conventional and asymmetric capabilities, and how to translate these insights into defense industry ecosystem requirements must be conducted by the region's most senior defense and security stakeholders.

## 1. TOP-LEVEL GOVERNMENT SPONSORSHIP

Any strategy to develop a domestic defense industry cannot succeed without strong leadership. Under the guidance of each national government at the highest level, defense industrialization can gain the sponsorship required to overcome bureaucratic obstacles and meet objectives.

The GCC's nascent defense industry requires the consistent, long-term support of the national government. To be sure, there are already signs of change. One GCC member where the most senior leaders have laid out a path for developing its domestic defense industry is the UAE. There, the top leadership of the government reformed the structure of the defense industry in 2014 to create a single platform for manufacturers. It set up the Emirates Defense Industries Company (EDIC), by integrating the assets owned by the three main defense firms in the UAE, Mubadala Development Company, Tawazun Holding and Emirates Advanced Investments Group.

By creating a single defense-industry platform, the UAE hopes to achieve synergies from combining complementary defense services businesses. It aims to accelerate the development of technological capabilities and create new, highly skilled jobs for UAE nationals. The combined entity is a model for other GCC countries, where industry consolidation is likely to lead to stronger partnerships with OEMs.

The role of the top leadership of the UAE in the creation of EDIC illustrates the importance of industrial sponsorship from the highest levels of the state. There are likely to be similar efforts to streamline and consolidate defense companies in other parts of the GCC, as government leaders make military industrialization a higher priority.

An example of a country that has succeeded to industrialize its defense capability is South Africa. In the 1960s, as it began to face increasing international isolation and, subsequently, an arms embargo in response to apartheid, the government in Pretoria decided to develop the domestic manufacture of armaments as a strategic necessity. It established the Armaments Corporation of South Africa in 1968 to procure arms and to make them.

Two years before the end of apartheid in 1994 and the lifting of sanctions, the manufacturing subsidiaries of Armscor were split off and brought under Denel SOC, a newly formed state-owned industrial company. Even after 1994, when South Africa was able to purchase armaments on international markets, the government continued to provide support, to the point where Denel has been able to develop a range of weapons systems, including attack helicopters, air-defense missiles (sold to the Finnish Navy), anti-tank missiles, air-to-air missiles, UAVs and howitzers.

## 2. ENHANCED OFFSET PROGRAM

In many parts of the world, the most important mechanism for boosting the domestic defense capability is an offset program. This is an industrial compensation arrangement required by purchasing governments as a condition for buying goods and services from foreign suppliers. They come in two basic forms: direct offsets, where the compensation arrangement is in the form of help with the defense capability of the buyer (e.g. local production of components for the military hardware bought) and indirect, where the assistance is non-military.

The offset programs in four of the six countries of the GCC (the two with the smallest military budgets, Qatar and Bahrain, don't have such a program) has been considerable. But despite having spent hundreds of billions of dollars on imports of defense material, there has been little domestic defense development to show for it.

KSA began its offset program in 1984 and has, since then, set up a total of 36 companies with a total capitalization of US\$4.5 billion. But Oliver Wyman estimates that less than 4,000 jobs have been created for Saudi nationals to date. The United Arab Emirates (UAE) started its offset program in the mid-1990s. It has, since then, developed a domestic weapons system program and has designed and built its own armored personnel carrier, but exports have been minimal. Kuwait's offset program began in 1992 and has not resulted in a sizeable domestic defense industry.

Despite the lack of success in developing a defense industry, the GCC is expected to accumulate billions more in offset returns that are likely to go unsettled. According to Anderson and Moores<sup>1</sup>, KSA and UAE are expected to accumulate almost US\$25 billion-worth of unsettled offsets between 2012 and 2022 and Oman a further US\$2.2 billion.

It's important to understand why the GCC's offset programs to date have had such meagre results in terms of developing a domestic base for the defense industry. For one thing, most of the offset programs have been indirect. The Saudi-British Al Yamamah Program, for example, to buy Eurofighter Typhoons with a contract value of US\$8 billion, led to investments in a sugar refinery, petrochemical and pharmaceutical ventures and waste-oil recycling.

1. Anderson, G., and Moores, B (2013). The Growing Offset Burden: What A&D businesses need to know. HIS White Paper.

Offset requirements for local content have generally been too low and too weak. Kuwait, for example, has just 35% local content, compared with the value of the import, while in KSA there is no penalty if the vendor fails to live up to its side of the bargain. The UAE's program has had a higher threshold, with a 60% local content requirement and penalties for failure to meet the contract terms. However, the program has faced numberof weaknesses common to the GCC that enabled billions of dollars of potential value to be lost. These include:

- Vaguely defined objectives due to poor coordination among government agencies
- No “shopping list” of targeted offset projects
- Contracts parceled into small chunks, weakening the ability to maximize purchasing power
- Little government effort aimed at pairing foreign and local investors
- Inadequate monitoring and control
- Goals of vendor and buyer not aligned: the importing country wants to create employment; the vendor's country wants to retain as many jobs as possible. The former wants to acquire strategic technology, while the latter is reluctant to release it.

These weaknesses have resulted in localizing parts of the value chain that are of low complexity and are mostly labor intensive, making it unsuited to the objective of raising the skills of nationals.

#### Exhibit 6: Offset programs of selected GCC countries

##### EVOLUTION OF GCC OFFSET PROGRAMS (HIGHLIGHTS)

KSA	UAE	Kuwait	Qatar
<b>Offset Program Started</b>			
1980s	Mid '90s	1992	N/A
<ul style="list-style-type: none"> <li>• US\$130 -160 MM capital spending</li> <li>• Threshold: &gt; US\$106 MM</li> <li>• Obligation: 35% of contract</li> </ul>	<ul style="list-style-type: none"> <li>• Offset term: 7-10 years</li> <li>• Threshold: &gt; US\$10 MM</li> <li>• Obligation: 60% of contract</li> </ul>	<ul style="list-style-type: none"> <li>• US\$3.46 BN, 126 contractors</li> <li>• Threshold: &gt; KD3 MM</li> <li>• Obligation: 35% of contract</li> </ul>	<ul style="list-style-type: none"> <li>• No official offset policy</li> <li>• Announced US\$24 BN in deals in 2014</li> </ul>
<b>Clients</b>			
<ul style="list-style-type: none"> <li>• Economic Offset Program</li> <li>• Boeing</li> <li>• Lockheed Martin</li> <li>• Alsalam Aircraft Co.</li> <li>• Advanced Electronics Company</li> </ul>	<ul style="list-style-type: none"> <li>• Tawazun Economic Council</li> <li>• Boeing</li> <li>• Lockheed Martin</li> <li>• Raytheon</li> <li>• Burkan</li> <li>• Caracal</li> </ul>	<ul style="list-style-type: none"> <li>• Boeing</li> <li>• Siemens</li> <li>• Airbus</li> <li>• Hyundai</li> <li>• Mitsubishi</li> <li>• Siemens</li> <li>• Doosan</li> </ul>	<ul style="list-style-type: none"> <li>• Security-Safety Centre</li> </ul>
<b>Offset Outcomes:</b>			
<ul style="list-style-type: none"> <li>• 36 companies established with total capitalisation of US\$4.5 BN</li> <li>• 6,500 new jobs created (below potential estimated), 55% Saudis</li> <li>• Offset beneficiaries: electronics, pharma education, food processing</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal exports (e.g. handguns, ammunitions)</li> <li>• Offset project examples: weapon system program, machine parts program, industrial infrastructure program</li> </ul>	<ul style="list-style-type: none"> <li>• Limited in defense, offset program currently suspended; new rules to come out in 6 months</li> <li>• Offset project examples: vehicle fabrication, CO2 capture, marine rehabilitation</li> </ul>	<ul style="list-style-type: none"> <li>• Foreign defense companies are encouraged to invest and to build partnerships in R&amp;D and education in Qatar</li> </ul>

A number of countries have succeeded in developing a domestic defense industry through an effective offsets policy. Among them is Brazil, which leveraged a strong industrial and human-resource base for the transfer of aeronautical technologies through collaboration, co-production and joint ventures with its foreign partners. This has led to a steady increase in its capabilities in aviation, both civilian and defense, to the point where it collaborates in the design and production of advanced aircraft.

Turkey now supplies half of its defense requirements domestically, because it has rigorously enforced offset policies and has ensured a consistent flow of financing through a dedicated support fund. Since 1988, it has established strong capabilities across the defense value chain in military electronics, aircraft and missiles.

### 3. STRONG AND WORKABLE PROCUREMENT SYSTEM

An offsets policy cannot succeed without a process of translating the strategy into weapons procurement that will directly benefit the domestic arms industry. In the GCC, procurement has been challenging due to a complex and siloed system of decision making, starting from the Capability Development Plan through its implementation via Procurement and Programming.

Typically in other nations, the Ministry of Defense promulgates the Capability Development Plan for the Armed Forces. These are then translated to program requirements that require program solutions, such as amphibious vehicles, that are acquired in a procurement process in which vendors are selected and contracts drawn up. The Ministry of Defense then manages the vendor to execute the program.

This is more difficult and the GCC has struggled is to develop a full end-to-end view of procurement from planning to implementation. This is made more complex by the fact all implications from that it is hard to align the objectives of the army, navy and air force and to generate program synergies. In addition, Ministries of Defense in the GCC require enhanced capabilities to undertake and run the full procurement process from beginning to end.

By contrast, Turkey has an established defense purchasing program and an offsets policy that was launched in the 1970s. The Defense Industry Executive Committee, with more than 700 employees, is the final arbiter of the industrialization strategy and approves all major purchases of defense equipment.

Beneath it, the Ministries of Defense, Finance and Trade collaborate with each other to coordinate procurement through a single government agency, the Undersecretariat for Defense Industries (SSM). The Undersecretariat consolidates defense-purchase orders, builds the industrial base and controls the procurement process. The SSM oversees the defense-industry ecosystem made up of corporate national champions in electronics, aerospace, missiles and software.

These four companies work with OEMs, such as ADS and Lockheed Martin, transferring knowledge, investing funds and collaborating on defense projects in these four fields. Each of the companies themselves invest in, and transfer technology to, start-ups that are intended to innovate in sub-systems and components that will go into the production of new weapons systems.

## 4. BACK-TO-BACK OEM CONTRACTS

Back-to-back contracts make payment to the local subcontractor conditional upon the main OEM contractor receiving payment under the main contract. They are a form of best practice that ensures there is a long-term cash flow for the subcontractor and that the quality of output is sustainable. Specific agreements and opportunities put forward by NATO with local defense industry players have led to additional support in advancing the localization agenda through back-to-back contracts carried by large international OEM's. This has been demonstrated in Turkey, for example, through a number of back-to-back OEM contracts covering main OEM contractors such as: General Dynamics, Boeing, Airbus, Raytheon, Sikorsky and with local Turkish players such as: TAI, HEMA and Aselsan to name a few.

This arrangement has been very difficult to implement in the GCC because the regulations have restricted back-to-back contracts to defense companies that are at least 51% locally owned. As a result, foreign OEM's must conduct their business at arms' length with local partners. At times, the two sides' objectives have differed. The local partner wants to grow and localize the technology, while the foreign OEM would like to minimize exposure, fulfill its obligations and leave. This, therefore, leaves room for the GCC's defense industry to set up a more supportive regulatory environment that addresses these issues in order to enable back-to-back OEM contracts to be more effective and enforceable.

## 5. TRANSFER OF TECHNOLOGY

The development of a domestic defense industry requires sizeable investments in plant and equipment; the GCC countries also need to develop a skills base through the transfer of technology from advanced countries, such as the US and the UK, to the Gulf nations. Traditionally, however, the GCC has lacked the capability to absorb the technology, due to the shortage of nationals in the defense industry and the limited pipeline of STEM graduates. The parts of the value chain that GCC countries currently operate in are labor intensive, and so when there is a transfer of technology, they end up employing expatriate labor to implement the foreign technology. This, therefore, does not serve the objective of localizing the defense industry.

An example of a country setting long-term goals for technology transfer is Korea, where the development of a defense industry began in the 1970s. It established strategic JVs with OEMs in aerospace, field weapons, naval vessels and small arms. Each area of defense production was developed in stages, from maintenance, repair and overhaul, to assembly, to production and finally to export, working with OEM partners to build a global marketing network. More than 600 Korean engineers were trained in the US, while receiving technological assistance from Japan as well.

In 2006, the Seoul government established the Defense Acquisition Program Administration under the Minister of National Defense to enhance the effectiveness of procurement projects and ensure they met tech transfer objectives. In 2015, Korea and the US set up the Defense Technology Strategy and Co-operation Group to enhance collaboration between the two countries on transferring skills and know-how to Korean defense companies. An example is the transfer of jet technologies for the development of Korea's own fighter jets under the KF-X program. The Korean experience to increase its capacity to absorb defense know-how from its trading partners is a remarkable example of how.

## 6. EXPANDING LOCAL PRODUCTION FOR EXPORT

At the start, governments must provide seed financing to new companies working in partnership with foreign OEMs as part of an offset program. Once the start-up is off the ground, the company forms links to adjacent parts of the value chain, creating jobs and production networks that develop the domestic industry while providing low-cost foreign labor to the OEM.

As the local company grows, a burgeoning domestic market develops around it, and the company takes advantage of the links it has made to other parts of the value chain. By this stage, the OEM is gaining an opportunity to build a bigger customer base in the country while developing a local partner that can eventually be part of the vendor's global ecosystem. At a certain point, the local company is able to export, having developed the advanced expertise across the value chain. The OEM has a highly valuable international partner and the local company has the know-how to compete in global markets. The joint venture has become advantageous for both the OEM and the purchasing country. This formula has been applied by South Africa, Turkey and South Korea successfully and helping turn their domestic defense industry players into export income generators as well.

A few of the existing defense manufacturers in the GCC are exporting equipment and components but on a limited scale. In the case of the UAE's Mubadala, it set up a partnership with Boeing in 2009, to supply the US plane maker with components for stabilizing surfaces in aircraft tails, and is now a Tier-1 supplier. In 2013, the two companies said that Mubadala would supply up to US\$2.5 billion in advanced composites and machined metals to Boeing's 777X and 787 commercial airliners.

The UAE company is reportedly negotiating with Russia's state-owned Rostec to buy a stake in Russian Helicopters, which has a large share of the global market for combat and military transport helicopters. Mubadala also owns Italy's Piaggio Aerospace, which is developing a multirole patrol aircraft in partnership with Abu Dhabi Autonomous Systems Investments (ADASI). It is also testing the HammerHead, a UAV variant of the patrol aircraft.

Tawazun Holding, a UAE defense company, is looking for export markets in Africa, Europe and Brazil for its assault rifles and armored personnel carriers. ADASI, a Tawazun subsidiary, has an agreement with Boeing to provide training and support for Boeings UAVs in the UAE and to expand its marketing to the rest of the Middle East and North Africa.



These are promising signs of the potential size of export markets, if the GCC were to develop a bigger defense industry. India would be a prime target for sales from the GCC. New Delhi spends US\$51 billion a year on defense, the sixth largest military budget in the world. Although India has ambitions to expand domestic defense production and to export, there are still likely to be gaps GCC companies could fill, especially those with land and air defense capabilities. South-East Asia is another attractive potential market: defense spending there grew by 57% to US\$42 billion in the 10 years to 2015. The GCC could include defense exports in its existing bilateral trade and investment agreements in the region.

---

**Exhibit 7: Summary of key success factors across our six themes**

Six Themes	Examples	Success factors
1. Top level government sponsorship		<ul style="list-style-type: none"> <li>Strategic, decisive leadership and political will to build, launch, transform local defense industry</li> </ul>
2. Enhanced offset program		<ul style="list-style-type: none"> <li>Enhanced offset policy ensuring collaboration, coordination with foreign partners</li> <li>Established an industrial, human resource ecosystem to capture offset policy benefits</li> </ul>
3. Strong and workable procurement system		<ul style="list-style-type: none"> <li>End-to-end capability planning view beyond purchasing</li> <li>Effective governance ensuring alignment of all programs to defense industry objectives</li> </ul>
4. Back to back OEM contracts		<ul style="list-style-type: none"> <li>Guaranteed pipeline for both international OEM and local defense industry players</li> </ul>
5. Transfer of technology		<ul style="list-style-type: none"> <li>Maximize sources of know-how (either through international cooperation, private sector partnerships, academia) to drive tech transfer</li> </ul>
6. Expanding production for export		<ul style="list-style-type: none"> <li>Ramping up of local productive capacities generated scale economies benefiting domestic defense industry and driving exports</li> </ul>

---

# NEXT STEPS FOR GCC DEFENSE STAKEHOLDERS – FOUR PRIORITY ACTIONS

The strategies and stages outlined above provide an overview of how GCC member countries could build a domestic defense industry that can ideally support both conventional and future oriented capabilities. The industrial and innovation ecosystem and skills this development requires is, moreover, vital to the region's economic development.

To build up their capabilities, GCC nations have some crucial decisions to make. They must take a number of immediate steps:

## 1. DEFINE THE ROADMAP

With inputs from all the key stakeholders, including the Ministries of Defense, the Armed Forces, and key civilian ministries (such as Finance, Economy, Commerce) must decide upon the specific capabilities that are most critical for each country to localize. Oliver Wyman would argue that the areas of asymmetric warfare – UAVs, cyber defense and special operations – By gathering all critical stakeholders together, GCC nations must determine the sequence of capabilities to prioritize, invest in and localize.

## 2. TARGET THE KEY POINTS IN THE VALUE CHAIN

Governments will have to determine what capabilities they intend to develop domestically and what parts they will outsource or import, in line with the capabilities prioritized in the roadmap. They will have to bear in mind the geopolitical implications of their decision and the objective of increasing the indigenization of their defense industry.

Until now, the GCC defense industry has made progress in a few areas but has not focused on developing skills in the most knowledge-intensive parts of the value chain. The region has a presence in the manufacture of components, and in the maintenance, repair and overhaul of military equipment. It also provides support services such as education, training and consulting.

The GCC is largely absent, however, in the fields of design, research and development and in avionics and systems integration. It is important for the GCC to build capabilities in these areas to create a sustainable industrial base across the entire value chain. By developing the required skills in these more demanding fields, the GCC will be able to narrow the technological gap, not only with its Western partners, but also countries such as Turkey, Brazil and India. These skills will also be highly valuable for the development of asymmetrical warfare capabilities, for building and operating UAVs and for defending against cyber-attack.

### 3. ENGAGE IN DEFENSE DIPLOMACY

It should be noted that defense diplomacy works best when it operates hand in hand with political and economic diplomacy, mindful of the fact that it touches on a number of sensitive issues. Foreign policy will evolve and there will continue to be areas that are treacherous and must be navigated carefully. For one thing, defense agreements forged by Western nations and by the more advanced military contractors will always be scrutinized by the public from a humanitarian perspective.

Be this as it may, GCC member countries should continue to choose their international partners for this endeavor that are aligned with their foreign policy considerations. The main criteria for the choice of defense partnerships must be, first, that the partner nation and OEM have the desired technology; second that the partner is ready and willing to localize production in the GCC; third, that they see the GCC nations as long-term allies in pursuit of their own objectives.

### 4. STIMULATE THE ECOSYSTEM

It is critical that GCC countries focus on high-tech and high-value capabilities and choose international partnerships that will further their objectives. They will have to develop a pipeline of talent – starting with education programs to promote science, technology, engineering and mathematics – to ensure the capabilities are sustainable. And they must design industrialization policies and regulations to foster a defense ecosystem that will serve national interests for decades to come.

The following disciplines are highly critical: aerospace engineering, mechanical engineering, information technology (cyber security, information security and network architecture) and biological sciences, among others. It is therefore vital to localize not just the defense industry but also to enhance higher-learning institutions to deliver these programs. In addition, ensuring a healthy talent pipeline that prioritizes GCC nationals is a key element. If OEMs are to transfer technology to the Gulf countries, then the GCC must have the resource capacity to absorb it. Admittedly, it will be challenging to expand the number of nationals, and therefore a program to hire expatriates will be needed in the interim. But at no point should the GCC lose sight of the ultimate objective to build a sustainable base of local skills in the defense industry.

Once these decisions are made, the six countries will be on the way to securing their future, with the help of a strong and sustainable, homegrown defense industry.

Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialised expertise in strategy, operations, risk management, and organization transformation.

For more information please contact the marketing department by email at [marketing.mea@oliverwyman.com](mailto:marketing.mea@oliverwyman.com)

#### **About the Authors**

**Anshu Vats** is a Partner and Head of Public Sector, Middle East.

[anshu.vats@oliverwyman.com](mailto:anshu.vats@oliverwyman.com)

**Mark Serrano** is a Principal in Public Sector, Middle East.

[mark.serrano@oliverwyman.com](mailto:mark.serrano@oliverwyman.com)

[www.oliverwyman.com](http://www.oliverwyman.com)

Copyright © 2016 Oliver Wyman

All rights reserved. This report may not be reproduced or redistributed, in whole or in part, without the written permission of Oliver Wyman and Oliver Wyman accepts no liability whatsoever for the actions of third parties in this respect.

The information and opinions in this report were prepared by Oliver Wyman. This report is not investment advice and should not be relied on for such advice or as a substitute for consultation with professional accountants, tax, legal or financial advisors. Oliver Wyman has made every effort to use reliable, up-to-date and comprehensive information and analysis, but all information is provided without warranty of any kind, express or implied. Oliver Wyman disclaims any responsibility to update the information or conclusions in this report. Oliver Wyman accepts no liability for any loss arising from any action taken or refrained from as a result of information contained in this report or any reports or sources of information referred to herein, or for any consequential, special or similar damages even if advised of the possibility of such damages. The report is not an offer to buy or sell securities or a solicitation of an offer to buy or sell securities. This report may not be sold without the written consent of Oliver Wyman.