

R&D and Innovations in the GCC Countries: Recent Updates

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The GCC countries have had the vision and objective of transforming their economies traditionally based on petrochemicals to more diversified and sustainable economies with an important component based on R&D, technology, knowledge and innovation. An important part of this vision has been attracting and supporting SMEs who focus on R&D and innovation in the various industrial sectors.

This has unfastened a wide arena for investments and technological developments within the region which we explore in further detail below.

Innovation Updates: UAE

The UAE has adopted Vision 2021 with an aim to enlarge socio-economic development. It seeks transformation to a diversified and knowledge based economy by 2021 and the recognition that goes with that status. Vision 2021 is based on four principles, namely; United in Responsibility, United in Destiny, United in Knowledge and United in Prosperity. The vision focused upon improvisation in the fields of cohesive society and preserved identity, competitive knowledge economy, world-class healthcare, first-rate education system, sustainable environment and infrastructure, safe public and fair judiciary.

An important consideration of Vision 2021 is the attraction and thereafter support of start-ups and SMEs to ripen the seeds of science and technology with the objective of achieving technological advancements. In order to facilitate this Vision 2021 objective, the UAE government has recently announced a \$82 billion funding injection for innovations in the field of technology, with a view to transform UAE into a universal innovation hub.

Statistics published in 2016 show that the fundamental business and socio-economic growth of the Dubai is contemplated via technological start-ups and SMEs representing 95% of the business sector, accounting for 86% of the workforce and contributing around 60% to the non-oil GDP. All this is driven successfully by the combined efforts of the government and the private players whereby technology based SMEs and start-ups are expected to play a significant role in developing innovation and strengthening the economy of the UAE.

Among the strategies adopted by the UAE to enhance in the development of innovation is the endorsement of public-private partnerships across the UAE.

A large number of initiatives have been adopted in this respect, mainly in Dubai and Abu Dhabi, namely through research centres such as Khalifa Innovation Centre established by Khalifa University of Science & Technology (KUSTAR) and the UAEU Science & Innovation Park established by the United Arab Emirates

University.

A number of innovation incubators and accelerators have also been established and initiated throughout the UAE. For example, the Dubai Future Accelerators program (the “Program”) which aims to attract and support entrepreneurs and start-up companies from across the globe and link them to local sponsors, mainly governmental entities, in various industrial fields with the objective of developing innovative technologies. The Program is for a three month duration per round receiving around 30 entrepreneurs each round most of whom come from outside the country. The first round which took place between September – December 2016 brought around 130 million dirhams of contract values to these entrepreneurs.

Certain government-initiated innovation incubation and acceleration programs such as the Program are open to international entrepreneurs and companies. These international entities are provided with the opportunity to connect and work with local entities on projects of common interest which can then lead to business opportunities whilst giving entrepreneurs the opportunity to develop, test and deploy their innovations inside the UAE.

International companies continually show interest in opportunities inside the UAE due to its potential to become a regional and international innovation hub. However, certain government-initiated innovation incubation and acceleration programs are open only for UAE and/or GCC nationals. International companies can visit and review the eligibility conditions of the different governmental programs that are available.

Private innovation incubators and accelerators also exist and are increasingly present in the UAE. These are normally open to foreign entrepreneurs and can offer a good starting point for business support and networking in the UAE. In addition, there are a number of corporate incubators established which provide physical environments and infrastructure for the establishment of companies in UAE free zone with 100% ownership rights including Dubai Science Park, Dubai Techno Park, Dubai Silicon Oasis, D3, Masdar City, Dubai Internet City, Dubai Biotechnology & Research Park (DuBiotech), just to name a few.

Another example is Dubai SME which has instituted innovation incubation programs through its innovation arm Hamdan Innovation Incubator with the objective of backing entrepreneurs in the development, protection and commercialization of their innovations.

In Abu Dhabi, the *Takamul* program deployed by the Abu Dhabi Department of Economic Development supports and funds Emirati inventors, universities and companies in the protection and commercialization of their innovations.

The importance of Vision 2021 is also evidenced by the launch of the *Science, Technology and Innovation* (STI) policy in the year 2015 by the UAE Government which aims to prepare the UAE for the post oil world. The STI policy is an exclusive policy which identifies the requirements and challenges faced by exceptional researchers and scholars of Universities and also technical entrepreneurs. These challenges include the limitations to access to advanced and specialized R&D, R&D infrastructure, high laboratory costs and prototyping facilities to name a few. The STI aims to support start-ups by not only funding the innovations but ensuring the availability of R&D facilities for advanced research. It also aims to enhance the world class innovation ecosystem and offers availability of technology transfer and incubating innovation. To work on its implementation, the government established a committee known as the National Science, Technology and Innovation Committee policy in order to make the UAE amongst the most innovative countries in the world, owing to advanced and innovative talent, resources, legislations and infrastructure.

In view of spreading a culture of innovation, since 2015 the UAE government has assigned a week in the month of November as innovation week taking. The objective of innovation week is for educating and encouraging the public as well as private entities to take initiatives in fostering and developing innovations with a number of programs to accolade innovators for their initiatives.

Innovation Updates: Saudi Arabia

In a recent survey conducted in Saudi Arabia it was determined that young entrepreneurship and innovations in the field of science and technology are the next most economically effective forces after the oil industry. The Government is working towards implementing **Vision 2030** which was released in April of 2016 and which includes 80 projects costing up to \$3.7 billion and other implementation costs of \$20 billion. Vision 2030 is implemented with various objectives and targets sustainable development. It includes the following objectives:

- increase the non-oil revenue;
- developing a vibrant society with fulfilling lives;
- achieving environmental sustainability;
- raising the global ranking in the Logistics Performance Index (LPI) from 49 to 25 and to ensure that the Kingdom is a regional leader;
- improving social capital index from the current rank of #26 to rank #15;
- introduction of green cards:
- enhancement of tourism; and
- developing and facilitating SMEs and technology start-ups.

It has been slightly more than a decade since Saudi Arabia launched its most productive scheme for promoting the SMEs and start-ups. The SME Loan Guarantee Programme (KAFALAH), established in 2006 through the Saudi Industrial Development Fund, acts as a guarantor to commercial banks providing credit to SMEs. Another similar program known as the BADIR program for technology incubators commenced in 2008 with an aim to become the national incubation program.

Further, in 2012 Saudi Arabia announced its National Strategy which sets to transform the Kingdom into a knowledge based economy by 2030. Whilst, in 2015 Saudi Arabia triggered the development of SMEs by forming the Council of Economic Affairs and Development and the SME Authority in order to regulate entrepreneurial culture across the country.

Moreover, establishment of the National Science, Technology and Innovation Plan (NSTIP) in 2007 is a proof of the long term Saudi vision to progress in innovations and developments of technology. It encompasses eight major programs which are as follows:

- Strategic and advanced technologies;
- Scientific research and technical development capabilities;
- Transfer, development, and localization of technology;
- Science, technology, and society;
- Scientific and technical human resources;
- Diversifying financial support resources;
- Science, technology, and innovation systems; and
- Institutional structures for science, technology, and innovation.

The implementation of NSTIP is divided into 4 phases which is expected to complete by 2030. Dr. Alabdakadir, the NSTIP Secretary General, elaborated that *"the NSTIP has its strategic goals and an ambitious long-term vision to transform the economy and society of the Kingdom into knowledge based economy and society through a globally competitive national array"*. Since the establishment of NSTIP, the Kingdom has marked the growth of scientific publications and there is a sharp rise in patent filings both nationally and internationally through the Patent Cooperation Treaty (PCT) which KSA accessed on 3 August 2013.

The Saudi Government has funded various projects under the banner of NSTIP in various fields of science. This also includes the annual IP forums to promote discussion and improve understanding of IP issues within the academic and business communities and a series of IP awareness workshops targeting universities, research centers, and the industrial sector, with the support of World Intellectual Property

Organization (WIPO).

The NSTIP has specialized programs such as the Technology Transfer and Localization Program which runs exclusively for SMEs and start-ups and is aimed to develop and implement strategies supporting innovation and technology development and identifying research centers for the research and development of advanced industrial technologies. It asserts promotes the formation of SMEs development center; five technology incubators; and a development and localization city to provide infrastructure for technical industry.

A number of academic institutions have also taken action to support entrepreneurship including King Abdulaziz City for Science and Technology (KACST), a scientific government institution that supports and enhances scientific applied research. KACST established various institutions to benefit the technology start-ups such as the Centre of Excellence in Astronautics and Aeronautics (CEAA) which has the aim of promoting start-ups in the field of aeronautical science.

In terms of the objective of diversifying its economy into a knowledge based economy, Saudi Arabia is also working densely on public-private partnerships focusing on innovation developments. As an example of public-private institution, Saudi Arabia Advanced Research Alliance (SAARI) is working in collaboration with the King Abdullah University of Science and Technology (KAUST) to progress innovation and economic development.

One prominent technology based start-up funded by KAUST is a technology created by the company FalconViz. The technology consists of a 3D aerial scanning and modelling system that is adopted to multi-rotor copters and fixed wing unmanned aerial vehicles (UAVs). In addition, during the past year, huge funds were issued by the KAUST to Saudi Arabia based start-up NOMADD Desert Solar Solutions to support innovation in the field of the solar technology. Patent protection has been sought for the invention NOMADD (NO-water Mechanical Automated Dusting Device) pertaining to technology for cleaning dust from the surface of solar panels without using water and damaging the panels.

Innovation Updates: Qatar

To indulge young entrepreneurs in science and technology and to lead the nation forward economically, the Qatar government has linked its services towards the development of science. Evidently, Qatar has brought transformation in the education system and has strengthened the human and capital resources required to achieve its goal. The Government has also made major investments in developing an advanced academic and research environment to conduct high level scientific experiments and research.

In November 2016, the Qatar Foundation (QF) signed a Memorandum of Understanding (“MOU”) with almost 500 start-ups with global venture capital provided start-up funds and accelerators to stimulate and advance innovation in the MENA region. Through partnership, participating organizations will provide start-up funding, training and mentorship to start-ups across the MENA region over the next five years. It is apparent that this initiative will trigger start-ups to operate at an upgraded level by linking them to high tech companies. It has been reported that these high tech companies are major Silicon Valley players, such as Facebook, Salesforce and others.

The QF has a prominent funding role and it will become be an anchor investor in the MENA region to organize the annual world-class 500 Distro Dojo growth marketing accelerator program.

Moreover, the QF is a major funding unit in establishing R&D centers across Qatar and it works as a custodian of the national research strategy and direct funding for research through the national research fund. In our view, the most important establishments of QF are: Qatar Biomedical Research Institute (QBRI), Qatar Environment and Energy Research Institute (QEERI), and Qatar Computing Research Institute (QCRI). It further includes the supervision of the Qatar Science and Technology Park (QSTP) and QF’s flagship \$7.9bn Sidra Medical and Research Centre which is destined to be a major centre for research in the health sector. The University level research is conducted by the Qatar University and Hamad bin

Khalifa University which is the major contributors in upgrading the country to the knowledge based economy.

Qatar also affords start-ups and SMEs some latitude in setting up new businesses with the help of the QSTB incubator which extends support. It aims to support the launch, establishment and growth of promising start-ups, spin-offs and SMEs through mentoring, coaching, business facilitation, access to funding, subsidized office space in QSTP and other support business services. It offers two year subsidized rent to reduce overheads, expedite liquidation proceedings in the event the business gets shut down and reduce minimum capital requirements to assist the incorporation of a business.

Innovation Updates: Jordan

Innovation has grown more and more relevant to economic development. The importance of transferring knowledge from public research organizations to marketplaces, leading to establishment of efficient regulatory structures harnessing the abilities of multiple sectors has certainly increased. In Jordan, there is a considerable number of organizations on all levels highly engaged in innovation processes including the development of science and technology which has provided major opportunities for institutional enhancement. Jordan has actively sought to develop the national science and technology system and the key players in a national innovation concept in Jordan include; Incubators / accelerators; Science Parks /technology Parks / Business parks; Entrepreneurship and Innovation support initiatives/centers/programs; Technology transfer offices; and Clusters.

In Jordan SMEs comprise 98.5% of the total amount of registered companies,60% of formal jobs and contribute around 50% of the GDP. Jordan is very supportive of innovation development SMEs working in the ICT sector to the extent that Jordan has now become a hub for such activity.

Part of Jordan's 2020 vision is to enhance its knowledge based economy. With its clear ICT component, this offering makes Jordan one of the few countries to have actually measured ICT benefits with an ongoing implementation plan. The sector represents between 10-14 per cent of the Jordanian annual GDP, making it stand among the largest independent contributors to the economy with around 90,000 new positions being created between 1999 (since the establishment of the REACH initiative - JD's first ICT national strategy) and 2016. To enhance the research and market in the ICT, the government aimed to initiate the integration of ICT in other fields to spread ICT knowledge for the purposes of improving revenues and innovation development. Adapting the use of E-content and e-commerce are clear positive instances of ICT development.

In 2014, to keep pace with the rise in the competition and innovation development, Jordan announced its four-year national innovation strategy. The strategy takes into account a total investment of around JD 14.5 million. This strategy is adopted to meet the rising concerns of unemployment; it aims to facilitate young entrepreneurs in innovation and development. Realizing the importance of innovation and to encourage robust implementation of the an innovation development policy, the Jordanian government reactivated the National Council for Competitiveness and Innovation in early 2014 to define the challenges faced while traversing to the knowledge based economy. Furthermore, recently the Jordanian Council of Ministers, approved the accession of Jordan to the Patent Cooperation Treaty (PCT). This is an important step for SMEs and inventors in the Jordanian market as Jordan's accession to the PCT will benefit both local and foreign applicants, and we can expect to see a surge of patent applications in Jordan.

Recently, in December 2016, the Jordan Ministry of Industry and Trade signed a project agreement with the World Intellectual Property Organization (WIPO) for the establishment of technology and innovation support centers (TISCs) across the country in collaboration with a number of private and public entities. The project aims to support innovations and technology transfer through local innovators as a long term vision for strengthening the local industrial development and economy.

Innovation Updates: Bahrain

One of the leading entities in fostering innovation in the Kingdom of Bahrain is *Tamkeen*, a national authority established in August 2006, tasked with developing Bahrain's private sector as part of Bahrain's economic vision. In 2008, Vision 2030 for the economic development of the country was initiated and involved participation by government and the private sector. Vision 2030 is based on three principles: sustainability, fairness and competitiveness.

Tamkeen has two primary objectives; fostering the creation and development of enterprises and providing support to enhance the productivity and growth of enterprises and individuals. To achieve these objectives, *Tamkeen* provides a number of programmes including training, consulting, financing and entrepreneurship support.

Tamkeen launched "Mashroo3i" youth business awards, which gives youth a chance to build their own businesses, bearing all expenses related to the Business Plan and Prototype creation through the competition phases, without imposing any registration fees.

Another significant step supporting start-up and technopreneurs is the introduction of the virtual commercial registrations by the Ministry of Industry and Commerce, which allows a registration of a company without the requirement of a physical premises.

This type of commercial registration is allowed for 39 commercial activities including computer programming activities, graphic design, interior design consulting, photographic activities, software publishing, sound recording and music publishing activities, motion picture and video and television program activities.

Innovation Updates: Kuwait

As with other Gulf countries, Kuwait has a higher oil revenue c as compared to other alternative sources of revenue generation. Given the regional focus upon diversification of the economy, the Kuwait government has begun pushing funds for starts-ups, SMEs and technopreneurs. The latest World Bank statistics demonstrate that SMEs contributes only to 3% to Kuwait's GDP, compared to an average of 50% in high-income economies. Furthermore, SMEs only account for roughly 23% of Kuwait's workforce, about half of the average in high-income and emerging economies.

The Kuwait Government took the initiative to promote SMEs development by allotting a National Fund in 2013. Moreover, in 2016 an MOU was signed with the Kuwait Foundation for the Advancement of Science (KFAS) to partially or fully fund 250 backlogged patent applications. Furthermore, Kuwait took steps to strengthen its intellectual property laws by implementing the GCC wide trademark law in December 2015.

In another important initiative, the Kuwaiti government has adopted a new decree (No 29 of 2016) for the establishment of the Kuwaiti Association for the Support of Inventors. According to the announcement, the purpose of the association is to provide support for Kuwaiti inventors to enable them to excel and develop more inventions and to increase the volume of Kuwaiti inventors within the innovation sector. The decree provides for a number of missions and visions to be implemented by the association.

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