



Connect Arab Summit
5-7 March 2012
Doha, Qatar

15 February 2012

Original: English

Innovation *Background Paper*

1. BACKGROUND

The *Connect Arab Summit* offers a unique opportunity for leaders from the public and private sectors as well as international and regional financing and development agencies to meet, forge partnerships and initiate new related national and regional initiatives.

During the Summit preparation process, *innovation* was identified as one of four thematic priorities that should be further explored. Why has innovation arisen to the top of the policy agenda for stakeholders in the region as it has elsewhere in the world? One reason is a growing recognition by policy makers of the important contribution that innovation plays in national development and socio-economic growth. Indeed, with an ongoing shift toward knowledge and service-based economies, our concepts are rapidly changing as to what constitutes a country's *factor endowments*¹. Increasingly, the national ability to rapidly innovate is playing a major role in an increasingly global economy.

As noted in a 2010 Ministerial Report on the OECD Innovation Strategy²:

"Innovation is essential if countries and firms are to recover from the global economic downturn and thrive in today's highly competitive and connected global economy. It is a powerful engine for development and for addressing social and economic challenges. And it holds the key, both in advanced and emerging economies, to employment generation and enhanced productivity growth through knowledge creation and its subsequent application and diffusion."

Although the role of innovation in socio-economic growth is widely accepted, less well understood is the important linkage between innovation and widespread access by citizens to ICTs and broadband. The Ministerial Report referenced above echoes the findings of the *Broadband Commission for Digital Development*,³ as well as many similar studies:

"Today, high-speed communication networks support innovation throughout the economy much as electricity and transport networks spurred innovation in the past. Governments should promote information and communication technologies (ICTs) as general-purpose platforms for innovation and knowledge sharing by upholding the open, free, decentralized and dynamic nature of the Internet."

¹ In economics a country's *factor endowment* is commonly understood as the amount of land, labor, capital, and entrepreneurship that a country possesses and can exploit for manufacturing.

² Ministerial Report on OECD Innovation Strategy at <http://www.oecd.org/dataoecd/51/28/45326349.pdf>

³ <http://www.broadbandcommission.org/>

What is Innovation?

Understanding how policy makers can positively impact innovation, whether at national, regional or global levels, remains a somewhat elusive topic. Beneficial policy interventions are difficult to articulate because our concepts of *what is innovation* and *how it can be measured* continue to evolve.

For example, as noted by the authors of INSEAD's *Global Innovation Index* (discussed below), the evolution of what constitutes innovation can be discerned in subsequent versions of the *Oslo Manual*, which guides statisticians in their attempts to measure it.⁴ In 1992 and 1997, the *Manual* focused exclusively on technological innovations, covering only products and processes. In 1997, coverage was extended from manufacturing to services. In 2005, the 'technological' qualifier for innovation was eliminated, innovation in methods was added, and for the first time, innovation in the public sector was mentioned as an area needing further study. This was further reinforced in 2010 in the Ministerial Report on the OECD Innovation Strategy which suggested that statisticians should try to measure public sector innovation as well as innovation for social goals (commonly known as "social innovation"⁵). This history suggests that our concepts of innovation are likely to continue to evolve in the coming years.

For the purposes of this background paper, we shall adopt the current definition of innovation articulated in the *Oslo Manual*:⁶

"An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organization or external relations."

Can Innovation be Measured?

Probably the most comprehensive attempt to measure innovation at macro national levels is INSEAD's *Global Innovation Index (GII)* — a comparative index ranking 125 economies — most recently published in 2011.⁷

The *GII* uses 80 indicators to produce a composite ranking of countries. While the exact methodology used is beyond the scope of this paper, it includes five *input pillars* capturing elements of national economies that are enablers for innovative activities: (1) institutions, (2) human capital and research, (3) infrastructure, (4) market sophistication, and (5) business sophistication. It also includes two *output pillars* capturing evidence of innovation outputs: (6) scientific outputs and (7) creative outputs. Each pillar is divided into sub-pillars composed of individual indicators. For example, the infrastructure input pillar includes a sub-indicator using the ITU's ICT Development Index (IDI)⁸ data on ICT access and use.

Generally, it can be noted that measuring innovation and particularly its *impact* is still a "work in progress" and depending on the statistical methodologies used, country rankings can differ across other attempts to measure innovation. These include, *inter alia*, the BCG/NAM International Innovation Index⁹, the Innovation

⁴ http://www.oecd.org/document/33/0,3746,en_2649_34273_35595607_1_1_1_1,00.html

⁵ http://en.wikipedia.org/wiki/Social_innovation

⁶ OECD and Eurostat (2005), *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data*. OECD, Paris, at http://www.oecd.org/document/33/0,3746,en_2649_34273_35595607_1_1_1_1,00.html.

⁷ See <http://www.globalinnovationindex.org/gii/>

⁸ <http://www.itu.int/ITU-D/ict/>

⁹ <http://www.bcg.com>

Union Scoreboard¹⁰, the Global Innovation Index of the Economist Intelligence Unit¹¹, the Innovation for Development Report¹² and the Global Competitiveness Index¹³ from the World Economic Forum.

This suggests that, in order to support evidence-based decision-making and policy accountability, measurement of innovation capabilities at national and Arab regional levels as well as comparative measurement at regional levels in Arab States, taking into account national specificities, will be central to any innovation agenda.

2. PURPOSE OF THIS PAPER

By bringing together key global and regional players in the sector, the *Connect Arab Summit* can:

- Raise awareness of the role of innovation for socio-economic growth in Arab States, particularly as relating to the supporting role of the ICT sector;
- Contribute to the development of related national and regional strategies and identify priorities, goals and targets for the promotion and fostering of innovation in Arab States;
- Identify key stakeholders and mobilize the human, financial and technical resources necessary to support growth in innovation capabilities in Arab States;
- Federate political and economic initiatives that contribute to an enabling environment for innovation in Arab States.

The purpose of this paper is to explore recent concepts of innovation and what stakeholders in Arab States might do to further encourage it. It also makes reference to specific national initiatives and success stories contributing to innovation in Arab States in Annex A.

More specifically, this paper proposes possible policy interventions that may positively support building innovation at national and regional levels.

3. SUMMARY OF THE EXISTING SITUATION

Of the 22 Arab States formally represented in the *Connect Arab Summit*, 15 are found in INSEAD's Global *Innovation Index* with 5 in the top 50 rankings of 125 countries. These are Qatar: 26; UAE: 34; Jordan: 41; Bahrain: 46; and Lebanon: 49. Other rankings include Kuwait: 52; Saudi Arabia: 54; Oman: 57; Tunisia: 66; Egypt: 87; Morocco: 94; Syria: 115; Yemen: 123; Sudan: 124; and Algeria: 125. Lacking sufficient indicators and not ranked in the GII are Comoros, Djibouti, Iraq, Libya, Mauritania, Palestine and Somalia.

As demonstrated by their GII rankings, some Arab States have made significant strides in transitioning from mainly oil-based economies to more knowledge-based, innovative and economically diversified societies. In a number of countries, there have been a number of policy initiatives that have positively contributed to building national innovation capabilities. These include, *inter alia*, educational reform initiatives, new universities, new research institutes, support for entrepreneurs and business incubation and build-outs of sophisticated ICT infrastructures. The most visible changes have been in the Gulf region where vast

¹⁰ http://ec.europa.eu/enterprise/policies/innovation/facts-figures-analysis/innovation-scoreboard/index_en.htm

¹¹ <http://www.eiu.com>

¹² <http://www.innovationfordevelopmentreport.org>

¹³ <http://www.weforum.org/issues/global-competitiveness>

resources have been made available to implement knowledge-building and innovation initiatives on faster time scales.

A thoughtful contribution on the development of knowledge societies in Arab States is the *Arab Knowledge Report 2009 – Towards Productive Intercommunication for Knowledge*¹⁴ produced by the Mohammed bin Rashid Al Maktoum Foundation and the United Nations Development Programme/Regional Bureau for Arab States. Written by 100 Arab scholars and specialists, the Report:

“aims to establish and develop a comprehensive knowledge base through the creation of a generation of future public and private sector leaders capable of seizing knowledge by the forelock and setting it to work on confronting the development challenges of their societies, while at the same time raising the standard of scholarly research and development, stimulating leadership in business, fostering innovation and creativity among youth, revitalizing the concept of productive culture, and strengthening ways of bringing different cultures closer together”.

The *Arab Knowledge Report* identifies a set of what are considered to be essential pillars for building knowledge societies in Arab States: *education, information and communication technology (ICT), support for research and scientific innovation, and enabling institutions*. It also makes a series of proposals on how elements of the knowledge gap in the Arab world might be overcome.

But it should also be noted, through the actual situation in the Arab World, that there is a real lack of regional or sub-regional initiatives in connection with ICT innovation. This will probably impact any regional approach in identifying the Arab region challenges and opportunities.

4. CHALLENGES AND OPPORTUNITIES

A significant challenge is to identify some of the *essential pillars* of a framework-based approach to an innovation agenda that might be applicable across Arab States yet respond to national or regional specificities. A subsequent challenge is to identify specific goals and target objectives that would represent practical and tangible outcomes of the Summit that would broadly advance an innovation agenda at national and regional levels.

One possible framework that could be considered, the *OECD Innovation Strategy*, suggests a multi-point strategic and broad-based approach to innovation by governments.¹⁵ An adaptation of these elements for the Summit could be summarized and elaborated on as described below:

- Empowering people to innovate;
- Unleashing innovation in firms;
- Creating and applying knowledge;
- Applying innovation to address global and social challenges;
- Improving the governance and measurement of policies for innovation;
- Promoting regional and international Arab co-operation and partnerships.

¹⁴ <http://www.mbrfoundation.ae/English/pages/AKR2009.aspx>

¹⁵ See Footnote 2.

Empowering people to innovate

- Education and training systems should equip people with the foundations to learn and develop the broad range of skills needed for innovation in all of its forms, and with the flexibility to upgrade skills and adapt to changing market conditions. To foster an innovative workplace, ensure that employment policies facilitate efficient organisational change.
- Enable consumers to be active participants in the innovation process.
- Foster an entrepreneurial culture by instilling the skills and attitudes needed for creative enterprise.

Unleashing innovations

- Ensure that framework conditions are sound and supportive of competition, conducive to innovation and are mutually reinforcing.
- Mobilise private funding for innovation, by fostering well-functioning financial markets and easing access to finance for new firms, in particular for early stages of innovation. Encourage the diffusion of best practices in the reporting of intangible investments and develop market-friendly approaches to support innovation.
- Foster open markets, a competitive and dynamic business sector and a culture of healthy risk-taking and creative activity. Foster innovation in small and medium-sized firms, in particular new and young ones.

Creating and applying knowledge

- Provide sufficient investment in an effective public research system and improve the governance of research institutions. Ensure coherence between multi-level sources of funding for R&D.
- Ensure that a modern and reliable knowledge infrastructure that supports innovation is in place, accompanied by regulatory frameworks which support open access to networks and competition in the market. Create a suitable policy and regulatory environment that allows for the responsible development of technologies and their convergence.
- Facilitate efficient knowledge flows and foster the development of networks and markets which enable the creation, circulation and diffusion of knowledge, along with an effective system of intellectual property rights.
- Foster innovation in the public sector at all levels of government to enhance the delivery of public services, improve efficiency, coverage and equity, and create positive externalities in the rest of the economy.

Applying innovation to address global and social challenges

- Provide a predictable policy regime which provides flexibility and incentives to address global challenges through innovation in developed and developing countries, and encourages invention and the adoption of cost-effective technologies.
- Spur innovation as a tool for development; strengthen the foundations for innovation in low-income countries, including affordable access to modern technologies.
- Foster entrepreneurship throughout the economy, and enable entrepreneurs to experiment, invest and expand creative economic activities, particularly around agriculture.

Improving the governance and measurement of policies for innovation

- Ensure policy coherence by treating innovation as a central component of government policy, with strong leadership at the highest political levels.
- Foster evidence-based decision making and policy accountability by recognising measurement as central to the innovation agenda.
- Enable regional and local actors to foster innovation, while ensuring co-ordination across regions and with national efforts.

Promoting regional and international Arab co-operation and partnerships

- Improve international scientific and technological co-operation and technology transfer, including through the development of international mechanisms to finance innovation and share costs.
- Develop cooperation and partnerships between developed and developing countries, to encourage innovation and creativity and the adoption of cost-effective technologies.
- Establish efficient and effective mechanisms to support an innovation agenda across Arab States, particularly as it relates to the sharing of experiences and success stories.

5. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Each year, governments spend billions of dollars on research and development in areas such as technology, education and defense. Yet, ironically, they tend to invest very little in themselves and how they tackle complex social and economic problems. Adopting an innovation agenda offers new opportunities to work across siloes, move beyond past assumptions, frame challenges, define opportunities and steward their implementation.

Evident in the current success stories in Arab States and from the framework-based approach discussed above is that *innovation does not occur in isolation*. Rather there are a set of pillars that advance an innovation agenda at national and regional levels. In other words, innovation arises out of the intersection of a series of interacting initiatives across multiple sectors performed by a broad group of actors — including governments, institutions, firms and, increasingly, ICT-enabled users. For this reason, national innovation policy interventions require a *policy coherent approach*.

A policy coherent approach will necessarily treat innovation as a central element of national development agendas. This is not without challenges. Coordinating different innovation policy interventions across different stakeholder bodies that intersect with other (sometimes conflicting) national policy objectives can be problematic if not daunting — and it invariably introduces a set of transactional and coordination costs. But getting the right national innovation governance framework in place provides an important mechanism to raise broader awareness of the role and relevance of innovation and can bring relevant stakeholders together. For example, the right innovation governance framework can be a platform that builds a deeper national understanding of the necessity for cross-linkages between previously siloed initiatives (e.g., the importance of cross-disciplinary education initiatives and bridging the gap between universities and R&D initiatives with industry and firms).

As part of this approach, it should be recognized that an underlying pillar for innovation is a robust ICT environment which includes widespread availability of broadband networks. This is paramount as there is wide acknowledgement that high-speed communication networks are platforms for innovation throughout the economy much as electricity and transport networks were platforms for innovation in the past.

Although there are many stakeholders involved in national innovation processes, firms remain the pre-eminent means of translating new ideas into jobs and national wealth. New and young firms are particularly important, as they often exploit technological or commercial opportunities that have been neglected by more established and conservative companies. Therefore, a policy environment that supports the start-up and expansion of new firms is particularly critical for innovation to flourish.

In this regard, some observers have suggested that recent political events in Arab States, where ICTs appear to have been used both as platforms and catalysts for change, may offer new opportunities to drive technology development and start-ups in the region. For example, initiatives like Google's Ebd2 ("Start" in Arabic) in Egypt represent the latest in a range of seed and mentorship programmes designed to support ICT entrepreneurial ventures in the Arab region. Likewise, the number of *Startup Weekends*¹⁶ for young Arab entrepreneurs as well as other government and private incubator programmes suggests a wave of new vitality in the region leveraging a dynamic ICT sector.

At the same time, there appears to remain a profound generational gap between the ICT-savvy youth who are permanently online to a global world and a more conservative generation still restrained by deference to the role of government (for example, for job creation), power and tradition. These tensions invariably spill over between those who promote a "go-fast" versus a "go-slow" approach to change.

As a number of Arab States have already recognize the importance of building knowledge-based, innovative and more economically diversified societies, there are abundant opportunities to take advantage of lessons learned from existing success stories — as well as recognizing that there exists a set of common needs and drivers across many Arab States.

One such driver is the current levels of unemployment in Arab States. These are among the highest in the world with many of the jobless being young people who can make up about 60% of the region's population. Many of these young people are highly educated but face a real lack of job opportunities leading to emigration and "brain drain" towards more dynamic work environments.

The World Bank has put forward that approximately 50-100 million new jobs need to be created in the region before the year 2020. This suggests that the necessary changes to be undertaken cannot be incremental. Rather, there is a need for innovative thinking, new approaches and bold steps to combine the tremendous potential of youth, entrepreneurship and innovation in the region.

General Principles

Based upon these considerations, the following key principles may help in establishing innovation strategies in the Arab countries, at national as well as regional levels :

- Governments should consider innovation as a key component of government policy and ensure policy coherence by treating it with strong leadership at the highest political level.
- Governments should articulate and adopt a strategic and broad-based framework approach to innovation that takes into consideration current best practices and involves a range of stakeholders, including governments, educational and research institutions, firms, consumers and, increasingly, ICT-enabled users.
- Governments should robustly promote ICTs as general-purpose platforms for innovation and knowledge sharing to build knowledge societies.

¹⁶ <http://startupweekend.org/>

- As firms are the pre-eminent means of translating new ideas into jobs and national wealth, governments should promote a policy environment that supports the start-up and expansion of new and young firms as they are critical for innovation to flourish.
- Considering the high levels of unemployment in the region, with most of the jobless being young people, governments, in cooperation with the private sector and regional Arab organizations, should consider innovative thinking, new approaches and bold steps to leverage the combined potential of youth, entrepreneurship and innovation in the region.
- Governments, private firms and regional Arab organizations should consider the adoption of regional Arab approaches to fostering and promoting innovation strategies.
- In order to support evidence-based decision-making and policy accountability, measurement of innovation capabilities should be undertaken at national levels as well as comparative measurement at regional levels in Arab States.

Recommended Goals and Targets

Goal	Targets
<p>Consider innovation as a key component of government policy and ensure policy coherence by treating it with strong leadership at the highest political level.</p> <p>Articulate and adopt a strategic and broad-based framework approach to innovation that takes into consideration current best practices and involves a range of stakeholders, including governments, educational and research institutions, firms, consumers and, increasingly, ICT-enabled users.</p> <p>Support evidence-based decision-making and policy accountability, undertake measurement of innovation capabilities at national levels as well as comparative measurement at regional levels in Arab States.</p>	<p>Integrate ICT innovation as a key component of government policy in coherence with national development agendas with clearly expressed political support and strong leadership at the highest political level.</p> <p>Provide a high level policy commitment to an innovation agenda as part of national development strategies and ensure policy coherence by establishing a governance framework that crosses regions and sectors and includes roles for relevant stakeholders, including governments, education and research institutions, firms, consumers and ICT-enabled users.</p> <p>Foster innovation in the public sector at all levels of government to enhance the delivery of public services, improve efficiency, coverage and equity, and create positive externalities in the rest of the economy.</p> <p>Develop robust measurement of innovation capabilities at national levels as well as to support comparative measurement at regional levels in Arab States.</p> <p>Promote a culture of innovation at all levels from consumers to corporations. Document and share related and replicable best practices.</p>
<p>Promote ICTs as general-purpose platforms for innovation and knowledge sharing to build knowledge societies.</p>	<p>Create a suitable policy and regulatory environment that allows for the responsible development of technologies and their convergence.</p> <p>Ensure that a modern and reliable knowledge infrastructure that supports innovation is in place, accompanied by the regulatory frameworks which support open access to networks and competition in the market.</p> <p>Undertake national ICT innovation initiatives, where appropriate, using partnerships, that respond to improving delivery of public services (e.g., government, education, health, transport, quality of life).</p>
<p>Promote a policy environment that supports the start-up and expansion of new and young firms as they are critical for innovation to flourish.</p>	<p>Develop a national policy coherent approach fostering the start-up and expansion of new and young firms through concrete initiatives such as seed funding and grants, business incubation/support, bureaucracy reduction, tax and other incentives, use of shared facilities and employment policies that</p>

Goal	Targets
<p>Establish a cooperation agenda between governments, private sector and regional Arab organizations, to consider innovative thinking, new approaches and bold steps to leverage the combined potential of youth, entrepreneurship and innovation in the region, in order to face high levels of unemployment in the region, with most of the jobless being young people.</p>	<p>facilitate efficient organisational change.</p> <p>Mobilise private funding for innovation, by fostering well-functioning financial markets and easing access to finance for new firms, in particular for early stages of innovation.</p> <p>Foster partnerships, open markets, a competitive and dynamic business sector and a culture of healthy risk-taking and creative activity.</p> <p>Provide necessary mid and long term predictability in the general environment in order to encourage entrepreneurship in general and in the ICT sector in particular.</p>
<p>Develop and coordinate an Arab regional ICT innovation approach to make Arab states collaborate efficiently for the benefit of a regional integration based on best practices in innovation strategies.</p>	<p>Establish an efficient and effective follow-up regional coordination mechanism to support an innovation agenda across Arab States and the ongoing sharing of best practices and experiences.</p> <p>Establish a regional “Arab Centre for Development of Innovation and Knowledge”.</p> <p>Establish a regional web portal and capacity building activities focused on innovation.</p> <p>Develop cooperation and partnerships between Arab States as well as between developed and developing countries, to encourage innovation and creativity and the adoption of cost-effective technologies.</p>

ANNEX A: SOME EXAMPLES OF INNOVATION RELATED INITIATIVES IN ARAB STATES

Education City, Qatar

Education City is an initiative of the Qatar Foundation for Education, Science and Community Development. Located on the outskirts of Doha, it covers 14 square kilometers and houses educational facilities from school age to research level as well as branch campuses of leading universities. Six prestigious American, one French and one UK universities have already established sister campuses in *Education City*.

Dubai International Academic City, UAE

UAE's *Dubai International Academic City (DIAC)* development is scheduled to be completed in 2012. This major project was launched in May 2006 and will be a center for schools, colleges and universities. By 2015, *Dubai International Academic City* is expected to host more 40,000 students.

Education Reform for Knowledge Economy (EFRKE), Jordan

ERFKE is a major Jordanian education initiative specifically targeting the knowledge economy. Phase two of the initiative is running through 2015. Jordan's Education Initiative (JEI), launched in 2003, won the UNESCO prize for the use of ICTs in education. Today, 6,000 IT graduates enter the workforce annually.

Maadi and Smart Village, Egypt

Egypt has long championed ICTs as part of their national development agenda with an ICT Master Plan already established in 2009. Their Information Technology Industry Development Agency (ITIDA) and the Ministry of Communication and Information Technology (MCIT) were instrumental in establishing the Maadi Technology Village in southern Cairo and Smart Village in Cairo's western suburbs. The Maadi call center is expected to serve as a major outsourcing destination and to create 40,000 jobs. Smart Village, established in 2003, already has more than 120

companies and 28,000 professionals.

UAE's ICT Fund

One initiative to promote innovation in the ICT sector in the United Arab Emirates is the establishment of an "ICT Fund" to provide targeted funding and advisory services to companies, organisations and individuals to empower them to develop the innovation and knowledge capital of the UAE ICT sector with research, education and entrepreneurship.

According to the fund's website, it's "driven by a strong vision to make the ICT sector the leading sector in the Middle East through enabling and fostering progressive innovation in the field."

Through the ICT Fund, UAE's Telecommunications Regulatory Authority is sponsoring 56 students to continue their academic career at Sharjah University for Emirati students specializing in ICT.

Source: <http://www.ictfund.ae>

ICT Innovation Programme, Tunisia

Main drivers include promoting R&D activities lead by producing actors and contributing to high technological value projects, especially for the Digital Economy.

Main goals include developing new types of PPP; creation or development of innovation oriented enterprises which includes R&D activities in the mid/long term socio-economic development process; contributing to building a structured ecosystem enabling ICT development; assistance of operators in optimizing their technical activities and developing new commercial offers through innovative solutions in order to respond to user requirements: (security, quality of service, ergonomics, etc) and translating innovation into competitive advantage.

El Ghazala Communications Technological Park, Tunisia

Created in 2001, main motivations include providing an enabling environment for high technological value activities involving Academies, Research

and Software development (referred to as the Golden Triangle). Achievements include:

- Establishment of units dealing with innovation;
- public academies and 1 private university;
- public research units; a large number of private software development units; and,
- involvement in world-wide cooperation networks concerned by innovation.

Badir Program for Technology Incubators, Saudi Arabia

The BADIR program for technology incubation was established in 2006 by King Abdulaziz City for Science and Technology (KACST). It focuses on supporting technology based business opportunities and the development of technology entrepreneurship. Currently, Badir supports two incubators BADIR-ICT (information and communications technologies) and BADIR-BIO (bio-technologies) and BADIR-AMI (advanced manufacturing and materials technologies).

<http://www.badir.com.sa/en/>

King Abdulaziz and his Companions Foundation for Giftedness and Creativity (Mawhiba), Saudi Arabia

The Mawhiba program is geared towards developing creativity among students at the general education level. The foundation is independent, but works closely with all schools in the Kingdom to support the gifted and encourage creativity in students. Among other things, it holds an annual contest in which thousands of students of all levels participate in.

<http://www.mawhiba.org>

King Abdulaziz City for Science and Technology (KACST)

KACST is both the Saudi Arabian national science agency and its national laboratories. The science agency function involves science and technology policy making, data collection, funding of external research, and services such as the patent office. One of KACST's main responsibilities is to foster national innovation and technology transfer between research institutes and the industry.

<http://www.kacst.edu.sa>

- Genius & Creativity Promotion Center – KAU (<http://gcpc.kau.edu.sa>)

Higher Education Innovation and research programs and institutes in Saudi Arabia

There quite a few programs in Saudi Arabia that harbour innovation and support creativity in higher education. To name a few:

- Dhahran Techno Valley (<http://dtv.kfupm.edu.sa/>)
- Center for Research Excellence Program - KSU (<http://ce.ksu.edu.sa>)