

The United Arab Emirates: Fostering a Unique Innovation Ecosystem for a Knowledge-Based Economy

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The United Arab Emirates (UAE) is quickly transforming itself from an oil-based economy to an innovative, knowledge-based economy. In fact, knowledge-based industries and services now make up a greater part of the UAE's GDP than oil revenues, having grown from 32.1% in 2001 to 37.5% in 2012.¹ By moving towards a knowledge-based economy, the UAE has diversified its economy and positioned itself as a key player in real estate, renewable energy, and aviation; it has also become a global hub for trade and logistics, financial services, and tourism. It has done this by innovating and aspiring to game-changing developments: the UAE is home to the world's tallest tower and its most sustainable eco-city, one of the world's largest airlines, and state-of-the-art infrastructure and smart government services—all helping it to move away from simply localizing external innovation to developing its own intellectual property and creative outputs.

The country's leadership aspires to create a knowledge-based economy fueled by innovation. This is evident in the UAE's *Vision 2021*, which aims to build a nation where 'knowledgeable and innovative Emiratis will confidently build a competitive and resilient economy.'² Towards this end, the UAE has invested significantly in education and capacity development, setting the foundation for long-term competitiveness.

The telecommunications sector in the UAE also has a key role to play in promoting innovation and in supporting the country's evolution towards a knowledge-based economy. Telecommunications infrastructure and services are the backbone of a knowledge-based economy. The sector's players are particularly well positioned to champion the UAE's national innovation ecosystem development goals by using their experience in commercializing innovation, their technical talent, and their institutionalized diversification into the digital space.

The UAE's innovation ecosystem

The three pillars of the innovation ecosystem are human capital, financial capital, and technological capital (Figure 1). The UAE is actively working to promote innovation through policies and targeted initiatives aimed at developing the human element of the ecosystem while also addressing the key enablers of the human factor: the requirements of financial and technological capital.

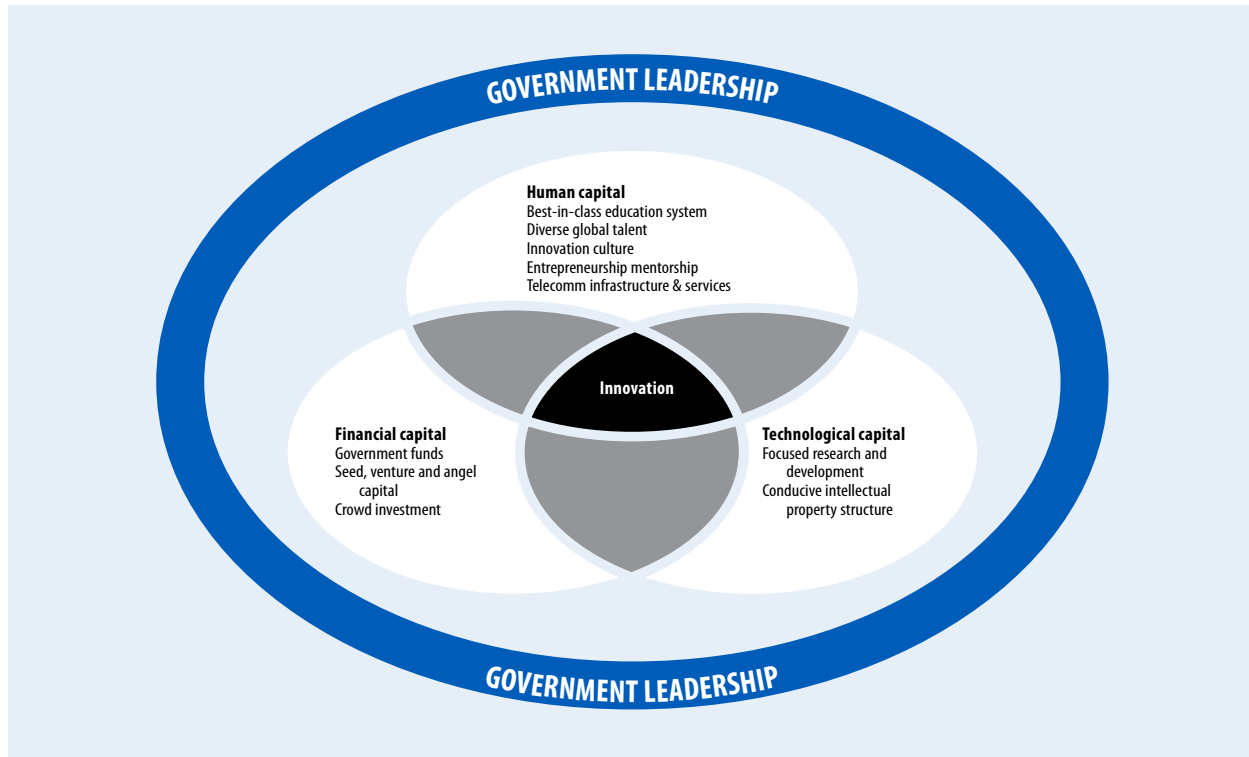
Human capital

Human capital is fundamental to all innovative change: a well-educated and highly skilled population and workforce are a necessary condition for the potential of innovation to be realized. To this end, the UAE has advanced its human capital on several fronts. The country has evolved

into a melting pot that taps into the experiences and perspectives of people from more than 200 different nations, and its population has grown enormously from 1975 to 2012—much more than the global average growth rate. It currently boasts one of the most advanced education systems in the Middle East and North Africa (MENA) region, thanks to continuous investments across all education levels. Moreover, advancing women's education and economic participation has resulted in women assuming leadership roles throughout the nation. A burgeoning culture of innovation—fostered by the collaborative efforts of government, educational institutions, entrepreneurial organizations, corporations, and the media—is bridging cultural barriers. Finally, support systems for innovation in the form of mentors, incubators, and accelerators are starting to emerge.

Education system

The UAE's budget allocation to education represents more than 20% of its total government budget, higher than the benchmark average of 13% (see Figure 2). The country is investing in building local talent by overhauling primary, secondary, and higher education systems and offering various opportunities for vocational training. As a result, the country's rank on the Education sub-pillar of the Global Innovation

Figure 1: The pillars of innovation in the UAE

Source: Strategy&analysis.

Index has improved in two years, from 65th in 2011 to 15th in 2013.

Keeping its national education strategy first rate is a continual effort. The UAE is constantly improving its educational strategy to ensure that the programmes developed in its schools comply with international standards. The Abu Dhabi Educational Council, for example, has developed a new curriculum to build the 21st-century skills needed to foster innovation; these skills include critical thinking, creativity, communication, and collaboration. This curriculum is beginning to teach these skills when students are young.

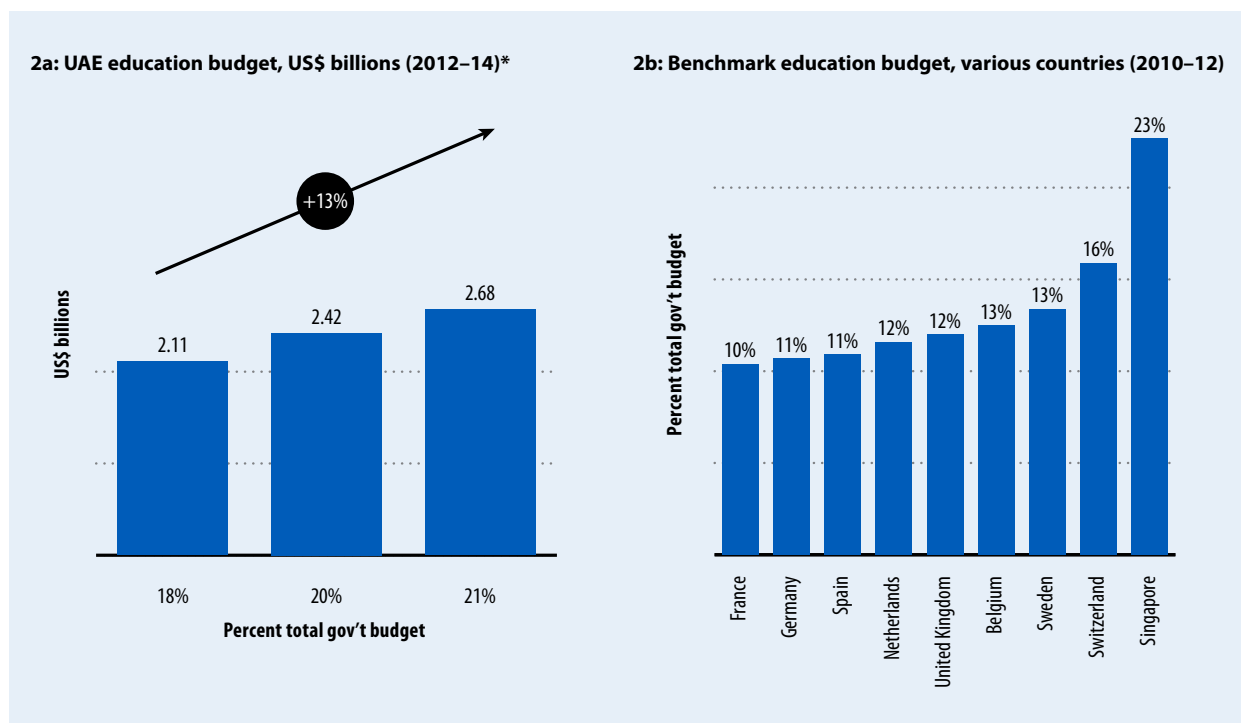
In the UAE, higher education institutes are expanding by establishing world-class local universities, attracting top universities to open branches in the UAE, and striking international partnerships. This

effort has been driven by national policies to develop adequate higher education and research facilities targeted at different sectors. A few recent successes include:

- The Khalifa University of Science, Technology, and Research has begun to offer various engineering degrees (including aerospace, biomedical and industrial engineering) in its aim to become an internationally recognized research university. Several international universities with a focus on post-graduate degrees (which also attract practiced professionals to the country)—including INSEAD, Paris-Sorbonne, and the London Business School—have opened branches in the UAE in the past few years. Dubai alone has attracted 26 international universities from over 10 countries.
- The Masdar Institute, established in 2007 in close cooperation with the Massachusetts Institute of Technology (MIT), is the world's first graduate-level research institute dedicated to alternative energy and sustainability.
- NYUAD, a joint venture between New York University and the Emirate of Abu Dhabi launched in 2010, offers liberal arts and science programmes and hosts a centre for advanced research.

The development of UAE nationals' capabilities is a top priority for the government. This place in the government's agenda is evidenced by its investment in continuing education and career guidance for its nationals through multiple initiatives. The government's key

Figure 2: Budget allocation for education as percent of total government budget



Source: World Bank, 2013; UAE Ministry of Finance.
* Note: Data are the latest available.

imperative going forward is to develop the deep technical skills that are required for disruptive innovations, as opposed to generalist skills. Almost 30% of students in higher education institutions in the UAE are studying business and economics; 14% are studying engineering and 8% are in the sciences.

The National Human Resource and Development Authority (Tanmia) was established in 1999 to support UAE nationals by linking them with potential employers and providing them with career guidance. In another example, Advanced Technology Investment Company (ATIC)—a wholly owned subsidiary of the Mubadala Development Company focused on the semiconductor industry—is actively developing Emirati talent in the technology space. For example, Tech Quest is an ATIC programme for middle and

high school students aimed at creating future leaders in mathematics, science, technology, and engineering. AlNokhba, another ATIC programme, provides internships and scholarships for bright Emirati graduates across a broad range of advanced technology-driven industries.

The private sector also contributes to the talent development of UAE nationals. In the UAE, telecommunications operators contribute 1% of their revenues to the ICT Fund of the TRA (a government entity); one of the ICT Fund's mandates is to grant scholarships to UAE nationals to study engineering within the UAE or abroad. The ICT Fund also promotes educational institutes within the ICT space by equipping them with laboratories.

Diverse talent

The representation of more than 200 nationalities within the country has made the UAE a melting pot that is fertile ground for innovation. Immigrants constituted 96% of the total UAE workforce in 2013 and 99.5% of the nation's 4 million private-sector employees. Traditionally, the local population has been more drawn towards working in the public sector but this is now beginning to change; the UAE government is encouraging the local population to join the private sector to develop their skill sets. This is a boon for the UAE: multicultural teams help fuel innovation by addressing issues in creative ways, drawing on members' unique experiences from their countries of origin.

Attracting foreign talent is an important aspect of establishing

and maintaining an innovative environment. In the UAE, several factors have played a role in attracting immigrants. The overall good quality of life in the country, which includes a safe and welcoming environment, state-of-the-art infrastructure, ease of doing business, and absence of income tax have been key drivers. Free zones have been set up where businesses can enjoy 100% foreign ownership and special tax and administrative incentives: there are 36 such zones in total across the seven emirates, including twofour54 media and production in Abu Dhabi, dedicated to media and entertainment organizations; Dubai Knowledge Village, dedicated to Human Resource Management and learning excellence; Ras Al-Khaimah Industrial and Technology Park, a world-class business hub facilitating industrial growth and development; and Fujairah Creative City, which benefits smaller media companies and freelancers.

Women are another key contributor to UAE's diverse talent pool. The World Economic Forum's *Global Gender Gap Report 2013* ranked the UAE number one for female educational attainment.³ Although cultural nuances restrict their labour participation (27.5% participate in the workforce, compared with 62.5% of men), women have taken up entrepreneurial roles. The UAE is committed to advancing female leadership and increasing female participation in the economy through various initiatives. For example, every government agency is required to have at least one board member who is a woman. The Abu Dhabi Hub of the Global Shapers Community, launched by the World Economic Forum in 2013, seeks to support women through Fikrati, a competition aimed at fostering an entrepreneurial culture among

Emirati women. The Emirates Business Women Council builds awareness, educates, promotes opportunities, and effects positive change in the community.

Innovation culture

Establishing a culture that encourages innovation and individual characteristics conducive to the ability to look beyond an established norm is essential to an environment that enhances innovative ability. Cultural barriers to innovation—such as fear of failure and an aversion to taking risks—can present serious difficulties. Such barriers are starting to diminish in the UAE.

Although government jobs have historically been the preferred employment for UAE nationals, 71% of UAE millennials (those who are 35 years old or younger) currently have entrepreneurial aspirations.⁴ Women, in particular, may prefer entrepreneurship because of the flexible working hours and the ability to work from home. In fact, more tech entrepreneurs in the UAE are female than in many other parts of the world: women account for 35% of tech entrepreneurs in the region, compared with a global average of 10%.⁵

A collaborative effort among government authorities, private corporations, media, and entrepreneurial organizations is driving this cultural shift through regular innovation- and entrepreneurship-themed events, dedicated media content, and awards that celebrate innovation successes. Start-up Weekends at which aspiring entrepreneurs can pitch and develop ideas have been organized in Dubai, Abu Dhabi, and Sharjah. Top-quality talent is visibly recognized in the UAE through various awards such as the Young Emirati Innovators Prize (YEIP), the Patent Filing Award,

and the Manchester Innovation Award. Wamda, a regional platform for empowering entrepreneurs, has a media site dedicated to entrepreneurship. Other media organizations—such as TechView.me and TechStars, which provide seed funding, mentorship, and a network of alumni and mentors—focus exclusively on tech entrepreneurship within the region. For instance, du encourages its employees to innovate and has started an 'ideation platform' through which employees can share their innovative ideas.

An interesting example of innovative entrepreneurship is that of Sougha, a social enterprise initiative launched by the Khalifa Fund that is proving to be instrumental in reducing innovation barriers. Sougha's model is interesting for many nuances, including being a reliable platform for skilled Emirati artisans to become entrepreneurs and providing them with essential business know-how and consumer insights. This allows the artisans to use their skills to create non-traditional products, such as iPad cases made of traditional weaves, thus extending the market and consumer scope. Truly, this is an example of a model that is bridging the gap between traditional culture and contemporary needs. Most importantly, it is helping Emiratis embrace innovation.

Entrepreneurial mentorship

One other essential element of a successful ecosystem of innovation is the encouraging and fostering of young entrepreneurs. One of the most effective ways to do this is through mentoring. In the UAE, this is taking shape—more than 10 incubators/accelerators are operational in the country—a substantial increase from the three that were active in 2008. These include in5 (in Dubai Internet City), Turn8 (by DP World), i360

accelerator, Silicon Oasis Founders, SeedStartup, Endeavor, twofour54's Ibtikar, afkar.me, the First Steps Business Center, and the Dubai SME Business Incubation Center.

These incubators and accelerators offer a variety of mentorship and business support services for UAE nationals and immigrants alike. SeedStartup, for example, brings international start-ups to a three-month acceleration programme held in Dubai. The programme provides value-added services and events (e.g., a demo day that connects start-ups with investors) and seed investment up to US\$25,000 for a 10% flat stake. Start-ups from Bahrain, India, Italy, Jordan, Malaysia, Tanzania, the United Kingdom, and the United States of America (USA) have already participated in SeedStartup's programme. In another example, Dubai SME provides a variety of advisory and incubation services to small and medium-size enterprises (SMEs) in Dubai, including the Intilaq programme focused on UAE nationals, the Business Incubation Center, and the Dubai Entrepreneurship Academy. Dubai SME also issues best practice recommendations, launches competitions (e.g., the Young Entrepreneur Competition, or YEC), and ranks the top 100 SMEs in Dubai each year. Furthermore, the TRA's ICT Fund supports government-sponsored incubators within the country by financing entrepreneurs in the ICT space within these incubation centres.

The UAE private sector too is establishing and supporting platforms for collaboration, innovation, and new entrepreneurial ventures. One of the foremost examples of this was *The Entrepreneur* reality show, presented by du and aired regionally. This show provided a platform for aspiring entrepreneurs to

realize their dreams, network, and exchange ideas with the goal of nurturing talent. Along with a platform from which to launch the business, the winner also received mentorship by experts over the course of a year.

Telecommunications infrastructure and services

Connectivity creates access to information and connects people, enabling them to learn online, build their skills, and collaborate in real time. In a world where physical boundaries are steadily diminishing, good telecommunications can be a catalyst to fulfilling dreams. Beyond basic connectivity, telecommunications infrastructure and services play a critical role in supporting innovation. For example, du offers a user-friendly platform called 'du Developer Cloud' that enables innovators to develop mobile applications at no cost. du has also launched a series of initiatives in line with Dubai's vision of becoming a Smart City and in line also with the UAE's overall Smart Government programme. These initiatives include the provision of WiFi access across all public areas in the UAE, the introduction of smart telecommunications building infrastructure guidelines, and the development of a smart application for the General Directorate of Residency and Foreigners Affairs.

Financial capital

Even highly skilled human capital cannot perform to its full potential without sufficient financial capital. Ensuring that funds are made available can usefully be an object of government policy, but private sources of capital also have a role to play. Within the UAE, several sources of funding are available, including government funds, equity investing, and crowd funding or crowd investment.

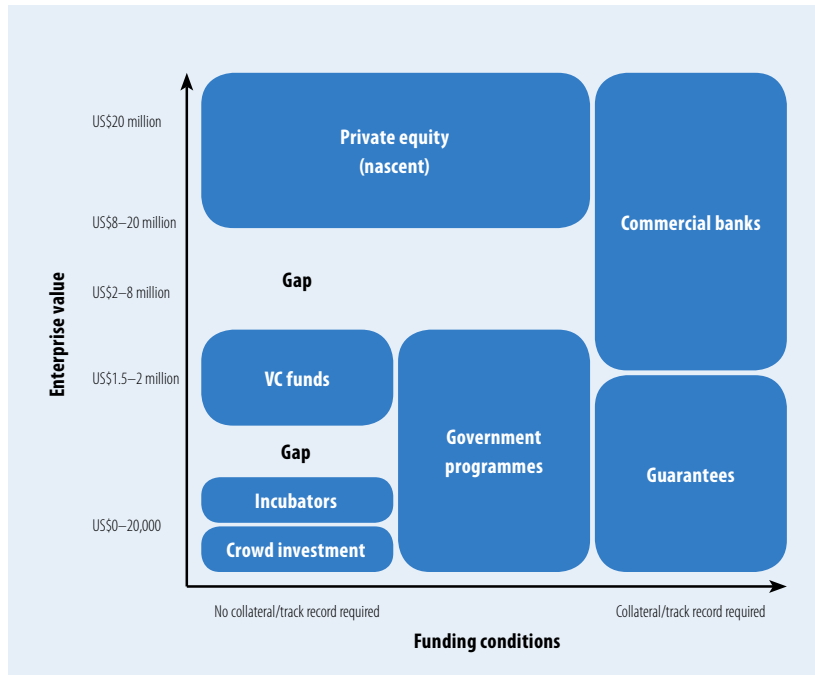
Government funds typically provide early-stage funding and include the TRA's ICT Fund, the Khalifa Fund, the Expo 2020 fund, and others. In terms of equity investment in the UAE, venture capital (VC) is the most accessible, despite the low risk tolerance of VC funds. Seed capital and angel investment are still scarce and are not yet institutionalized. Crowd-based funding and investment is a nascent form of funding within the UAE, and provides early-stage funding for start-ups.

Government funds

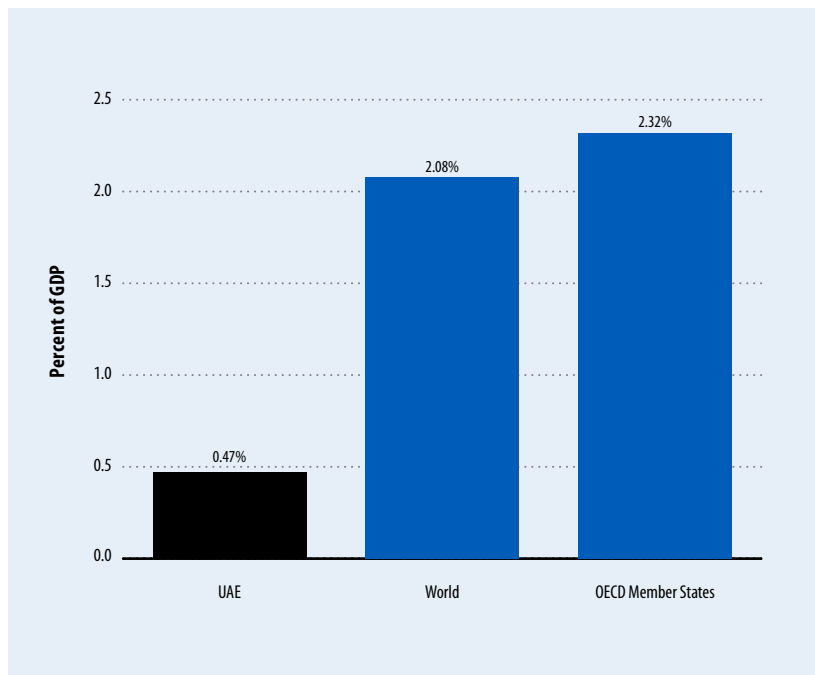
The government has undertaken many initiatives to support the funding of innovation. The TRA's ICT Fund aims to drive the country's ICT sector by providing R&D funding, scholarships for students of ICT engineering programmes, and support for incubators. Additionally, the Khalifa Fund for Enterprise Development (with approximately US\$550 million in capital) aims to develop local enterprises in Abu Dhabi by funding programmes, including microfinance and start-up loans, and by supporting entrepreneurs. The Expo 2020 Partnership Fund (€100 million) supports innovation and entrepreneurship ideas of varying size, scale, and stages of development with a focus on mobility, sustainability, and the creation of opportunities.⁶

Seed, angel, and venture capital

As noted earlier, government funding alone requires supplementation with private funding to meet the growing demand. In the UAE, seed capital is also available through incubators and, more recently, through crowd investment. This capital is still scarce, however, and institutionalized angel investment networks that provide smart capital are absent. This gap prevents innovators from

Figure 3: The funding gap in the UAE innovation ecosystem

Source: Strategy& analysis; interviews with key stakeholders in the UAE innovation system.

Figure 4: R&D expenditure as a % of GDP (2011)

Source: World and OECD average data: World Bank, 2013; UAE data: Strategy& analysis.

growing from the idea stage to the product stage and becoming eligible for VC funding (see Figure 3).

The number of regional VC funds actively investing in the UAE is growing.⁷ The number of VC deals in the region has grown by 50% between 2010 and 2012, with much of it (47%) focused on technology. Based on available data, the UAE captured 7% of the total deals in the MENA region over that time period.⁸ This trend has made Series A funding relatively accessible, although VC firms are still risk-averse and prefer to invest in established start-ups. Nonetheless, a wide range of UAE-based start-ups—such as Careem, the online chauffeur-driven car service; Glambox, the beauty products enterprise; and Souqalmal, the enterprise that enables UAE residents to compare financial services, schools, and other large purchases—have recently raised VC funding.

Beyond Series A funding, obtaining follow-on funding has been challenging, given the few private equity funds in the region focused on growth equity investments, especially within the technology sector.

Crowd investment

Crowd investment is an innovative approach that is becoming a viable source of early-stage funding for start-ups. Although crowd investment is still at a nascent stage globally, it is encouraging to see it being slowly accepted in the UAE. However, there is a need to boost it further, as new crowd-investment organizations may help address the scarcity of seed capital in the region.

Examples of crowd-investment organizations that are operating in the UAE include Zoomal, which follows the model pioneered by Kickstarter in the USA to support projects that require US\$5,000 or less; Aflannah, a source of

project-based crowd funding in the region focused on films; PiSlice, an online platform to facilitate micro-finance; and Eureka, a platform providing funding in exchange for equity.

Technological capital

Along with human capital and financial capital, technology is critical for unlocking ground-zero innovation. Although the UAE's spending on R&D as a percentage of its GDP is still below international benchmarks, in an attempt to address the need for this essential element of innovation, the country is kick-starting several targeted and industry-focused initiatives to develop its R&D efforts, as mentioned in the following section. Furthermore, the UAE government has reviewed its laws on intellectual property and copyright to align them with international standards.

Targeted research and development

In line with UAE's vision of a knowledge-based economy, the government's R&D efforts are targeted at specific sectors to solve its market needs and key socio-economic challenges. However, the UAE's R&D expenditure as a percentage of its GDP was 0.47% in 2011 (0.74% of non-oil GDP), below the global average of 2.08% and the OECD average of 2.32% (see Figure 4). Several players are implementing programmes and initiatives to solve this issue, including government, universities, and government-backed companies. As for the rest of the MENA region—and quite different from global trends—it is the public sector, rather than the private sector, driving efforts to encourage R&D in the UAE.

One example of a public scheme to enhance R&D is the Abu Dhabi Education Council, which pledged

US\$1.3 billion for university R&D between 2009 and 2018. In addition, the Abu Dhabi government will launch a research funding mechanism to institutionalize research activities in higher education institutions and secure sustainable funding. Abu Dhabi's plans are already resulting in the development of new R&D centres. For example, Khalifa University and Mubadala Aerospace are planning to establish an aerospace research and innovation centre at Khalifa University.

Beyond driving R&D in universities, the UAE government is keen on establishing scientific hubs to address socioeconomic issues relevant to the region. For example, TechnoPark was established as a science and technology park whose scientific activities are managed by the Dubai Institute of Technology (DIT). DIT is focused on enhancing research in five sectors: water, health, energy, engineering, and logistics and mobility. The International Center for Biosaline Agriculture is another example of an R&D centre focused on innovation specific to regional issues. It is a centre of excellence that aims to deliver agricultural and water scarcity solutions in marginal environments.

Investment in R&D has seen some success, even though most of the proposals are from the public sector. For example, Emirati companies, including Masdar Capital (a division of Masdar Institute) and ATIC, are investing in international companies with advanced technologies with the aim of potentially bringing these technologies to the region in the future.

The telecommunications sector in the UAE, through the TRA's ICT Fund, is actively sponsoring R&D projects and centres in various universities, including Khalifa University and UAE University.

The ICT Fund has dedicated AED 25 million to support the Arabic Digital Content initiative, which will develop tools and programmes to enhance Arabic content. The ICT Fund also finances Ankaabout, the UAE's Advanced National Research and Education Network (NREN), offering academic institutions connectivity to other education networks around the world.

As a result of this recent R&D activity, innovative technologies are emerging in the country (see Box 1). Examples include:

- A Khalifa University professor who benefited from the university's internal research fund was granted a US patent for the world's smallest semiconductor transistor.⁹
- Emirati students were granted a US patent for inventing a foot-based vehicle navigation system to allow disabled people to drive cars without using their hands.¹⁰
- The Masdar Institute and Abu Dhabi National Oil Corporation (ADNOC) are developing a technology that enables commercial-scale projects for carbon capture, usage, and storage, thus minimizing carbon footprint.¹¹
- The Masdar Institute is developing a technology to desalinate sea water using renewable energy sources, and is building the London Array, the world's largest offshore wind farm.¹²

Conducive intellectual property structure

As the UAE evolves in its innovation journey, it will need to build a robust and enforceable intellectual property rights system. Recently, the government has reviewed its laws on intellectual property and copyright and harmonized them with international standards (e.g., the US Patent Office

Box 1: UAE start-ups

The UAE's budding innovation ecosystem has inspired Emiratis and immigrants alike to become entrepreneurs, spawning several entrepreneurship success stories (see

Table 1.1). For example, UAE-based technology start-up launches are forecasted to rise at a faster rate than the MENA average between 2012 and 2015. By 2015, the UAE

is expected to witness 185 new tech-based start-ups (see Figure 1.1).

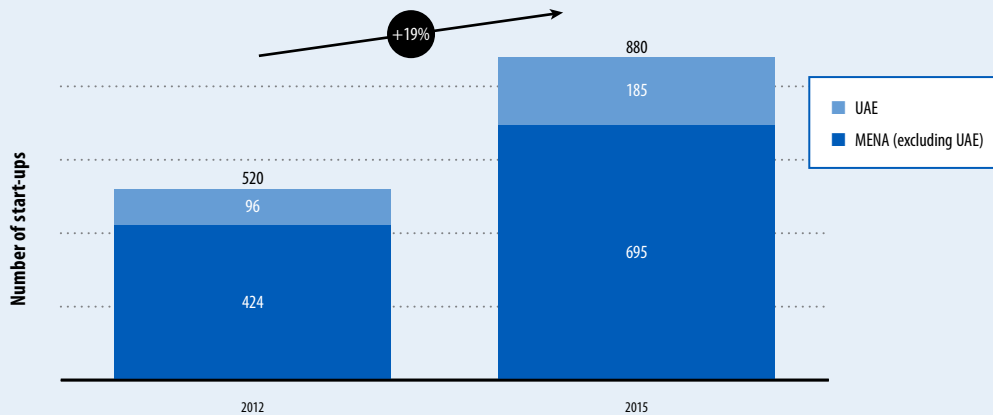
Table 1.1: Some UAE start-ups

Start-up name	Business type
Zawya	Online business intelligence platform focused on MENA; acquired by Thomson Reuters
cobone	Daily deals website; launched in 2010; acquired by New York-based investment firm Tiger Management for an undisclosed amount (rumored to be between US\$20 million and US\$40 million)
Just Falafel	Vegetarian fast-food chain incorporating worldwide tastes in the falafel recipe with a focus on health; franchise business model, going global, currently planning IPO
Careem	Online car-booking service; raised US\$1.7 million in a round led by STC Ventures and including angel investors
Glambox.me	Online beauty sampling shop and community; received US\$1.4 million from STC Ventures, R&R Ventures, and MBC Ventures to expand regionally
Souqalmal.com	Financial comparison website for products and services in financial services, education, and healthcare; raised US\$1.2 million from Hummingbird Ventures in its second round of funding
Qordoba	Language software and service solutions, including content development and website, social media application, and business document localization while integrating local customs and cultural references
nabbesh.com	Skill exchange platform connecting businesses with project-based and contract talent; winner of The Entrepreneur, a reality TV competition presented by du; prizes, provided by du, of AED 1 million with a further AED 500,000 in professional services.
JadoPado	E-commerce portal with innovative approach to user experience and supply chain management
Bayt.com	Online job site linking job seekers with employers; Bayt.com has more than 12.5 million registered job seekers
The Luxury Closet	Platform for buying and selling luxury items
propertyfinder.ae	Real estate listing service
mumzworld.com	E-commerce platform for mothers
Wally	Personal finance application with more than 100,000 users
Eureeca.com	A crowd-investment platform where businesses can raise capital from the crowd

Source: Strategy& analysis.

Note: The list in this table is not exhaustive

Figure 1.1: Number of tech start-ups in MENA (2012–15)



Source: DIC in collaboration with Frost & Sullivan, 2012; Strategy& analysis.

Note: Of the MENA start-ups that emerged in 2005–2012, 17% were launched in the UAE.

and Patent Cooperation Treaty).¹³ In addition, the Abu Dhabi Technology Development Committee developed the Takamul programme, which offers advisory and financial support for international patent applications. The total number of patent applications underwritten by Takamul has now risen to 66, of which 33 were underwritten in 2013 alone.¹⁴

Lessons learned

In the UAE's innovation ecosystem, the pieces of the puzzle are falling into place. The nation now offers a number of unique advantages, including a strong education system, a diverse pool of multinational and local talent, a growing innovation culture, and a series of targeted R&D initiatives. The collaborative efforts and leadership of the government is capitalizing on these strengths while addressing the challenges that remain. The private sector is playing a critical role in supporting the government's agenda and promoting the national innovation ecosystem.

The UAE has had to overcome several challenges in its journey towards becoming a knowledge-based society. These include wide dependence on oil revenues, a small population, and a cultural aversion to taking risks. Through its own example, the UAE can offer several recommendations to countries looking at commencing on their own innovation journey:

- **Institutionalize top-down aspirations.** A clear government vision that visibly communicates the importance of innovation on the government agenda creates a top-down push for innovation and prioritizes key focus areas.
- **Unlock telecommunications operators' potential role in the innovation ecosystem.**

Telecommunications operators are in a position to champion the development of national innovation ecosystems and can play a key role in catalyzing the human, financial, and technological factors in innovation.

- **Attract and promote talent.** Talent is critical for the development of a sustainable innovation ecosystem. Although it is important to fill capability gaps in the short term by attracting and supporting immigrant talent, fundamental improvements through longer-term initiatives to the system for training domestic talent are essential. The UAE is doing this by overhauling its education system and making some fundamental changes to the culture so that the population will embrace innovation.
- **Provide and promote smart capital at all funding levels.** Different types and amounts of funding are required at various stages of innovation evolution depending on its risk/return profile, whether this innovation is taking place in a start-up or a larger enterprise. Fostering an innovation ecosystem requires ensuring adequate early-stage funding, venture capital, and growth equity. Any gaps in these funding sources can break the overall system.
- **Partnerships, partnerships, partnerships.** Various stakeholders are required to work simultaneously and in concert for innovation to happen. This includes entrepreneurs, government entities, educational institutions, funds, the media, entrepreneurial organizations, and others. Unlocking innovation requires getting these disparate parties with distinct agendas to work together to drive the same objective.
- **Limited technical talent.** The number of students going into STEM fields (science, technology, engineering, and mathematics) in the UAE is still low compared with international standards. As a result, there are limited specialists with deep technical skills (e.g., developers, user experience experts) who can contribute to ground-zero innovation.
- **Restricted R&D budgets in the private sector.** Although the UAE government has put several initiatives in place to stimulate R&D activities, the overall spending in the country still lags behind because of limited spending by the private sector.
- **Environmental sustainability.** The UAE needs to ensure that its rapid pace of economic development is sustainable. This entails lowering the country's ecological footprint and effectively addressing climate change to sustain a natural environment conducive to innovation that will continue attracting foreign talent. The development of Masdar City and investment in solar parks, by both the government and the private sector, are steps in the right direction.
- **Increased prevalence of health issues.** High incidence of diabetes, early onset heart conditions, and widespread obesity are three serious health issues currently facing UAE nationals. A healthy mind goes hand in hand with a

healthy body, and thus addressing these issues and promoting healthy lifestyles is critical for supporting the development of a progressive, knowledge-based economy. This shift has already started through government pledges and movements by the private sector such as du's Every Step Counts initiative.

Although the UAE's innovation ecosystem is still evolving, policies that address these issues—issues of clear vision, talent, funding, and cooperation among stakeholders—are an essential part of what has worked for the UAE. Such policies will repay the effort needed to implement them with an environment that is more conducive to innovating, and thus to reaping the associated benefits for a nation's people.

Notes

- 1 The data in the chapter are all from the UAE *Yearbook 2013* unless specified otherwise. The yearbook is available at <http://www.uaeyearbook.com/yearbook2013.php?lang=ENG>; see National Media Council, 2013. Knowledge-based industries include financial services, manufacturing, restaurants and hotels, transport, storage and communication, and real estate and business services.
- 2 *Vision 2021*, p. 1; see <http://www.vision2021.ae/downloads/UAE-Vision2021-Brochure-English.pdf> UAE-Vision2021-Brochure-English.pdf.
- 3 World Economic Forum, 2013.
- 4 Bayt.com, 2014.
- 5 The Economist, 2013.
- 6 Wam, 2013.
- 7 Examples of these funds are Middle East Venture Partners, MBC Ventures, STC Ventures, and Wamda Capital.
- 8 MENA Private Equity Association, 2013.
- 9 Khalifa University, News Details, 2014.
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