

Health-Tech

An underserved industry within MENA

2017



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Global healthcare spending is projected to increase from \$8trn to \$18trn by 2040, however closer to home this will account for \$150bn across the MENA region by 2020, with a compound annual growth rate (CAGR) of 12% - one of the highest across the globe.

We share further insight in this report into the opportunities which this digital evolution presents within the healthcare sector.

Hisham Farouk, CEO of Grant Thornton shares his viewpoint on how connection and personalisation are becoming fundamental elements within Healthcare, which promote a healthy tech-investment landscape for an underserved industry within the MENA region.

The global healthcare industry is currently experiencing a technological revolution, which may seem grandiose, however, we are witnessing a shift from traditional to modern-tech simulated healthcare, which will enable both medical professionals and patients to access new virtual resources, further aiding effectiveness and efficiency.

We are encountering emerging trends which will inevitably transform the industry, these range from digital behavioural health treatment, telehealth, the use of big-data, wearables and the important role which blockchain will play going forward.

Technology has largely existed within the healthcare industry for many years, particularly in the form of treatment tools and platforms which identify, diagnose and provide a remedy for various conditions, however the challenge which the industry faces today focuses on accepting, implementing and working alongside new and advanced technologies which will revolutionise the industry, whilst providing much needed personalisation and connection for patients.

To further manifest this, we are witnessing a new wave of healthcare wearables, with shipments growing from 2.2 mn units in 2016 to a projected 97.6 mn in 2021, which will generate an estimated global revenue of \$18bn¹.

Equally, these global trends resonate across the MENA region too. In the near future, individuals will be able to use wearables to measure and understand personal risk, whilst monitoring real-time results of making healthy choices. With the high rate of technology adoption, the region could become global leaders in using wearable technology to transform personal healthcare.

That said, governments across MENA currently invest an average 8% of GDP in the region's healthcare², which lag behind other developed economies. Such shortfalls will create opportunities for private sector involvement and investment through private equity, venture capital and other forms of funding, which governments are increasingly seeking support from.

The regional market will be shaped by a range of opportunities in 2018. Ongoing trends such as compulsory health insurance schemes, generic substitution and medical tourism are expected to continue influencing the industry for years to come, which will give rise to further opportunities for tech-investors to capitalise on the underserved health-tech industry.

Hisham Farouk
CEO
Grant Thornton
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¹ Tractica
² Zawya

Executive Summary

Overview

- Global healthcare spending is projected to increase from \$8trn to \$18trn by 2040, however closer to home this will account for \$150bn across the MENA region by 2020, with a compound annual growth rate (CAGR) of 12% - one of the highest across the globe.
- The MENA region is home to an ageing population estimated at 20% by 2050, which according to trends will influence an increased need for healthcare.
- Governments across MENA are currently investing 8% of GDPs, hence funding shortfalls will create opportunities for private sector involvement and investors.
- Within the UAE alone, the healthcare market is currently valued at \$17bn, which is projected to surge to over \$28bn by 2021, driven by a shift in demand for preventive care, a rise in specialist medical services, further efficiently integrated health care solutions, alongside the high growth potential within specific medical device and pharmaceutical sub-sectors.

MENA Investment Climate and Opportunities

- Upcoming mega-economic events within the UAE, KSA, and elsewhere in MENA are significant drivers of development and employment.
- Mandatory Health Insurance (MHI) schemes and a positive employment outlook provide a healthy backdrop for the healthcare industry.
- 48% of youth (15-35) believe technology should be used in healthcare.
- Financing and support infrastructure for this sector has increased in recent years with US\$ 815mn invested in 2016, with over 100 support structures including incubators, accelerators, and venture capital funds.
- Egypt, UAE, Palestine, Lebanon, Jordan, and Saudi Arabia record the highest start-up activity in healthcare.
- The Medical Tourism Index 2016 ranked 15 cities from MENA in the top 50.

Why invest now?

- High penetration level of technology across the region
- Active and prominent focus on innovation by regional governments and service providers
- Ageing population which will drive increased demand rates within Healthcare
- Billion-dollar industry with limited access to investment and funding
- Rising demand and appetite to penetrate technology within the industry



\$18trn

Global healthcare spending is projected to increase from \$8trn to \$18trn by 2040.



The MENA landscape

As economic diversification plans and reforms take shape across MENA and the Gulf Cooperation Countries (GCC), non-oil growth in oil-exporting countries and the GCC are expected to accelerate from 2016 levels of 0.4% and 1.9%, to 2.9% and 3.0% in 2017³ respectively.

Economic Outlook

Policies stimulated by the UAE Vision 2021 and KSA Vision 2030 will significantly contribute to the changing landscape of the region, which will see the emergence of new industries focusing on innovative tech-enabled delivery models. Vision 2030 commits to building new infrastructure, world-class education, healthcare and an open and transparent environment for its citizens and those which reside in the country, whilst Vision 2021 aims to position the UAE amongst the best countries in the world by the Golden Jubilee of the Union.











Buoyed by upward trajectories in global economic growth forecasted at 3.5% and 3.6% for 2017 and 2018 and increased oil prices since the 2016 OPEC agreement, the MENA region will harbour a favourable investment climate.

From 2020 and after a period of transition during which the region restructures its old economic model, particularly the Gulf, will emerge stronger than ever with diversified, efficient economies becoming magnets for investment and new ideas, hence influencing a global shift towards the region.

Demographic profile

The MENA region is home to an ageing population estimated at 20% by 2050, compared to 2% today⁴, which according to trends will influence an increased need for healthcare in the future, therefore demand will increase for world-class healthcare which is cost effective, efficient and undistinguishable in quality.

The GCC is experiencing a unique demographic period in which one-half to one-third of the population is under 25 years of age⁵, of particular note is KSA, where 50.8 percent of the population are under 25 years of age. This large and growing youth population has placed KSA in a demographically historic moment that presents its society with sizable opportunities. The country can reap great benefits if they can harness the creative and economic potential of this so-called demographic dividend of young people.

Countries	Total population (0000)	0-14	15-24	25-59	60+
 Bahrain	1493	20	13	62	5
 Egypt	97553	33	17	42	8
 Iran	81163	24	14	53	9
 Iraq	38275	40	20	35	5
 Jordan	9702	36	19	40	6
 Kuwait	4137	21	12	62	5
 Lebanon	6082	23	19	46	12
 Oman	4636	22	15	60	4
 Saudi Arabia	32938	25	15	54	6
 United Arab Emirates	9400	14	11	72	2

⁶ OECD Benchmarking digital strategies in MENA

50.8%

of the population in Saudi Arabia are under 25 years of age.

³ IMF, May 2017

⁴ World Bank

⁵ Youth in the GCC report, 2016

⁶ OECD Benchmarking digital strategies in MENA



Why invest in MENA?

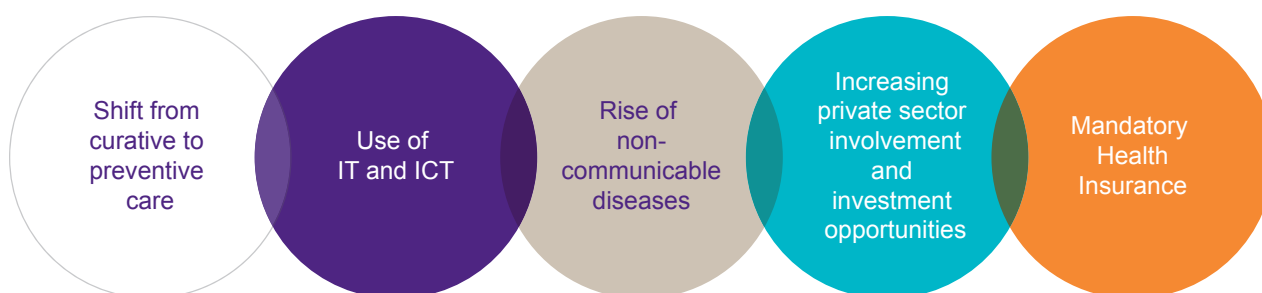
- A promising economic outlook which will challenge emerging market models, whilst providing a promising landscape and opportunity for investors.
- An active and prominent focus on innovation by regional governments and service providers have given rise to various strategies. Egypt, Jordan, Lebanon, Morocco, Tunisia, KSA and UAE have each recognised the strategic importance of digital technologies for public sector modernization, along with disrupting service industries to better serve their residents?
- The region has a high penetration level of technology, whilst being recognised as having one of the highest smartphone penetration rates in the world. Likewise, the regional has a rising demand and appetite to penetrate technology, particularly as a result of the youthful generation.
- The strategic geographical position, developed infrastructure and ongoing commitment to continue realigning the regulatory, financial and legal system which is synonymous with global best practice make the region an attractive place to do business.

MENA healthcare

Global healthcare spending is projected to increase from \$8trn to \$18trb by 2040, however closer to home this will account for \$150bn across the MENA region by 2020 with the GCC accounting for almost 50% of the share at \$70bn, with a compound annual growth rate (CAGR) of 12% - one of the highest across the globe.

Demand for high quality health care facilities across the MENA region have increased dramatically, and will continue to do so, influenced mainly by:

- Dominant expatriate labour and resident market, who demand instantaneous and exceptional healthcare
- Growing population, which increases by 1.9% per annum, greater than the global average of 1.1%⁷.
- Aging population which will account for over 20% by 2050
- Mandatory Health Insurance (MHI) schemes and a positive employment outlook provide a healthy backdrop
- An increase in medical tourism, with the region ranking all 15 cities in the top 50 of the Medical Tourism Index 2016
- There will be increased collaboration and M&A activity between healthcare streams, particularly life sciences and medical devices which will support the prevention of chronic and degenerative diseases.
- Within the UAE alone, the healthcare market is currently valued at \$17bn, which is projected to surge to over \$28bn by 2021, driven by a shift in demand for preventive care, a rise in specialist medical services, further efficiently integrated health care solutions, alongside the high growth potential within specific medical device and pharmaceutical sub-sectors
- Increased level of Government investment which accounts for over 70% of ongoing healthcare projects⁸
- Government initiatives such as the future accelerators programme in the UAE, which pairs global talent and technology firms in order to drive innovation across industries, the healthcare industry has already benefited from this programme through the application of 3D manufactured limbs.
- Public-Private Partnerships (PPP) are playing an increased role within the region, which will further support the industry given its current underserved position. We have already witnessed the introduction of the PPP law within the UAE in 2015, with similar such initiatives being considered across the wider region.



The MENA region is no exception to the global rise of non-communicable diseases (NCDs) – of which cardiovascular diseases (CVD) are the single largest killer. Statistics indicate that CVDs are responsible for one in five deaths in UAE and one in four adults in KSA are likely to have a heart attack within the next 10 years. Likewise, the prevalence of diabetes and obesity is amongst the highest in the world, while hypertension is on the rise.

Whilst the numbers are disturbing the region has made significant gains in many aspects of healthcare, such as

improving life expectancy and drastically reducing child mortality. The statistics highlight the challenge, along with the need to improve overall healthcare.

Fortunately, we have a great and real opportunity to improve people's lives in the region by moving from reactive to proactive and preventative care management. This begins with supporting individual lifestyle changes and benefiting from connected technology to ensure care is available when and where patients need it. The time is right to redefine care across the region by exploiting the advantages that the Tech-Industrial Revolution can bring to healthcare⁹.

⁷ JLL, August 2017

⁸ Al Arabiya

⁹ World Economic Forum 2017

The Health-Tech environment

The healthcare industry has been reliant on technology as an enabler of diagnosing and treating patients since the beginning of professional practice of medicine, however, the continuous advancement in technology is having a profound effect.

Biotechnology, pharmaceuticals, medical devices and research have contributed significantly to the development of the profession, whilst improving the health of patients around the world. From small innovations to larger, more complex technologies such as MRI machines, artificial organs, and robotic prosthetic limbs, technology has undoubtedly made an incredible impact to medicine.

The dependence on medical technology within the healthcare industry cannot be overstated, as a result of the development of these innovations, healthcare practitioners can continue to find ways to improve their practice – from better diagnosis, surgical procedures, and improved patient care.

Health technology is a broad field where innovation plays a crucial role in sustaining health, hence ongoing development and innovation of health-tech is fundamentally important. We explore a selection of tech-innovations impacting the industry today and which present opportunities for the MENA region:

Technology:

Artificial Intelligence (AI)

- Staggering CAGR of 52.7% from US\$ 667mn in 2016 to US\$ 7.98bn in 2022
- Startups working with AI in the US healthcare industry rose to nearly 70 in 2016 from fewer than 20 in 2012.
- Wide-reaching applicability from health management systems to personal assistants
- Uses of AI include remote patient monitoring, early cancer detection, diagnostics, and mortality prediction.
- Integration with other health technologies such as wearables, apps, robots, and other specialised health devices.

Technology:

Internet of things (IoT)

- Including devices, software and services, the IoT healthcare market is estimated to reach \$410bn in 2022 from \$58.9bn in 2014.
- With continuous growth forecasted, wearables account for 60% of IoT healthcare devices.

Technology:

Augmented & Virtual-Reality (AR/VR)

- Global market expected to reach \$5.1bn by 2025.
- Similar to systems in aviation, augmented reality will enable better training protocols specifically with the use of 3D modelling tools.
- Applications for AVR systems include surgical practice, remote diagnostics, and other health devices such as smart glasses for the visually impaired.

¹⁰ Zawya

¹¹ Medical Tourism Index 2016

¹² Google

¹³ Google research

Technology:

3D Printing

- At a CAGR of 20%, 3D printing in healthcare is expected to exceed \$2.2bn by 2024.
- Applications for 3D printing include prosthetics, on-field hospitals, medical tools and supplies, and prescription drugs.

Technology:

Robotics

- At a CAGR of 21.1% the medical robotics market is expected to reach \$12bn by 2021 from \$4.90bn in 2016.
- Multiple applications include exoskeletons, assistance in nursing care, precision surgery, and palliative or hospice care.
- Targeted drug delivery to specific sites or repairing of damaged cells using micro or Nano-robots are theoretical possibilities.
- Robotic Surgical devices, radiology application and virtual surgeries

Technology:

Software and cloud computing

- Electronic Medical Record (EMR) enable effective and efficient accessibility, record-keeping, and migration of data. EMRs historically assisted in identifying and monitoring high-risk patients.
- Utilising cloud computing, services such as SaaS, PaaS, and IaaS are affordable, scalable, and offer off-site access

Technology:

Big data and mobile apps

- Integration of big data, mobile apps, and smart digital devices to deliver historical and real-time patient data.
- Increased efficiency and effectiveness of care in collaboration with AI systems
- Using big-data in medical research, scientists have been able to examine diseases on a cellular level and produce antibodies against them

Technology:

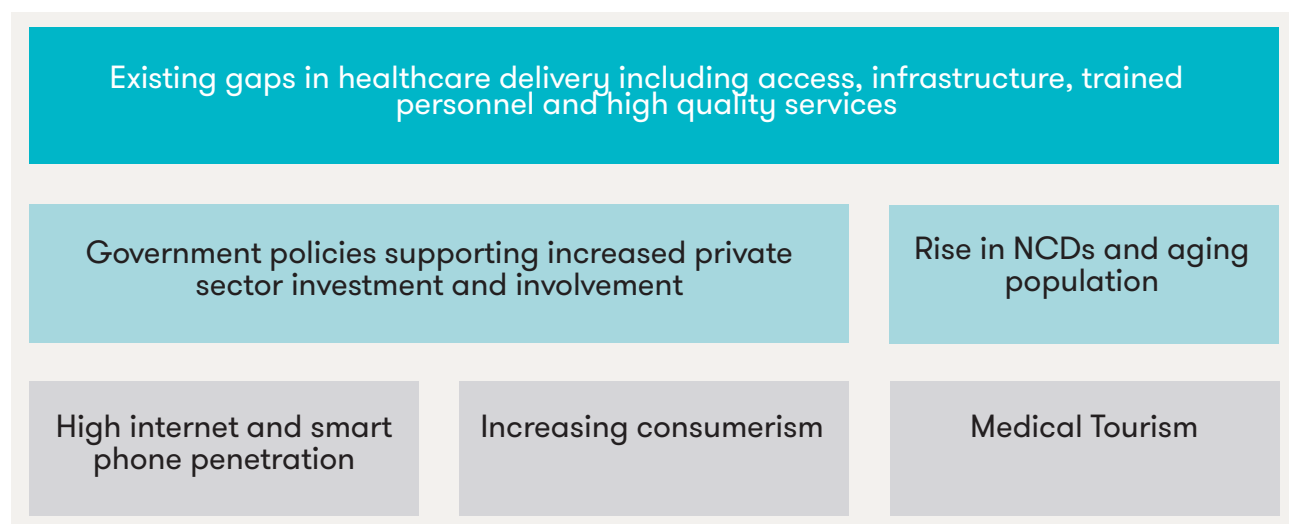
Other technology

- The market for Biologics is expected to exceed \$223.7bn by 2021. Samsung is a top investor.
- Drones are used in the delivery of medical supplies, medical kits, and prescription drugs to inaccessible areas.
- Growing popularity of mHealth platforms in developing and under-developed countries to provide healthcare services to rural and impoverished populations.



The application of health-tech in MENA

Governments across MENA currently invest an average 8% of GDP¹⁰ in the region's healthcare, however they are increasingly seeking private sector involvement and investment through PPPs, private equity, venture capital and other forms of funding. Population demographics and changing lifestyles suggest increasing consumerism amidst a tech-savvy and connected youthful cohort. However, specialised care needs for an ageing population is a growth sector.



Whilst economic policy documents akin to KSA's Vision 2030, and UAE's Vision 2021 are locally specific, they will impact regional economic factors such as employment, and intra-regional migration, further driving demand for healthcare and medical tourism. At present, 15 MENA cities rank within the top 50 on the Medical Tourism Index, further positioning the prominence of the region for such healthcare needs¹¹.

Currently, healthcare tech companies are in a nascent stage providing solutions that enhance healthcare knowledge and information. That said, the demand and local need for health-tech is particularly high amongst the MENA youth (15-35-year-old), as revealed in a recent study¹². The acceptance of such platforms instils a belief that technology can improve access, enhance quality and reduce costs associated to healthcare.



Within MENA the current technologies being explored include¹³:

- **Mobile:** A wide range of MENA start-ups offer remote access to information and monitoring of personal health indicators
- **Connected Health:** Offer a range of services which include consultation, remote diagnosis, bookings and education
- **Digital Therapeutics:** Several start-ups are focusing their effort on managing chronic diseases with the most prominent being diabetes
- **Data & Analytics:** Many firms are connected to capturing and analysing big data in order to support accurate diagnosis
- **3D printing:** 3D printing has not been exploited as widely as one would assume, however, the UAE has been one of the first countries in the region to manufacture 3D limbs

Taking into consideration the global innovative tech-solutions being applied to the healthcare industry, the MENA region has a significant opportunity to drive effective and sustainable change to an industry which will become increasingly important in the future.

The industry across the region is significantly underserved compared to the prominence of the sector in the future, along with the current tech start-up's and suppliers to the industry.



At present, 15 MENA cities rank within the top 50 on the Medical Tourism Index, further positioning the prominence of the region for such healthcare needs.

MENA investment: Health-Tech

US\$ 815 million invested in MENA start-ups last year¹⁴

Whilst the MENA market has witnessed an increased level of investment in start-ups across various sectors, it is clear that the healthcare sector is a niche at present with untapped opportunities. Start-up entrepreneurs across the region are currently developing and implementing digital solutions to address the shortage of skilled medical professionals across the region by leveraging virtual technologies, however, further solutions are required in order to ensure the region is not left behind in an ever-developing industry. A selection of MENA startups within healthcare include¹⁵:

Name	Services	Founders	Investment	Investors	Country	Established
Alem Health	Online platform connecting hospitals with a global network of professionals and services over 3G mobile connection.	Sajjad Kamal, Aschkan Abdul-Malek	N/A	Y Combinator, Nest, Enabling Future, WOMENA, Startup Health	UAE	2014
Altibbi	Online Arabic health portal enabling direct connections to top medical experts in the region	Jalil Abdulaziz Al-Labadi, Lahlan Jackson	\$8.5mn	Dash ventures, TAMM Invest, Rimco Investment, Middle East Venture Partners	Jordan	2010
Bayzat*	Online health insurance and HR solutions provider	Talal Bayaa, Amir Farha	\$7.6mn	BECO & WOMENA	U.A.E.	2014
Junnah	Wearable devices and mobile apps connected via social networking to monitor and share health indicators with peers.	Fouad Alfarhan, Sami Al hussayen	\$533k		KSA	2014
Shezlong	Connects users privately and anonymously to licensed, professional therapists via a mobile app and website	Ahmed Abu Elhaz	\$166k	A15, Endure Capital	Egypt	2014
Sohati	Consumer and patient information portal assisting in healthy living.	Zeina Sfeir, Wassim Kari, Naji Gehchan, Elsa Aoun	\$1.1mn	Hala Fadel	Lebanon	2014
Vezeeta*	Digital healthcare booking platform for patients and doctors	Amir Barsoum and Ahmed Badr	\$11mn	Technology and Development Fund, Silicon Badia, BECOL, Vostok New Ventures, Endeavor Catalyst	Egypt	2012
WebTeb*	Medical and health information platform	Mahmoud Kaiyal, Majed Abukhater (CEO)	\$7mn		Palestine	2011

*recognised in Forbes 100 top start-ups

¹⁴Arabnet

¹⁵Forbes MENA 100

85mn

people have access to the online network in the MENA region, which represents over 50% of the population.

\$1.42bn

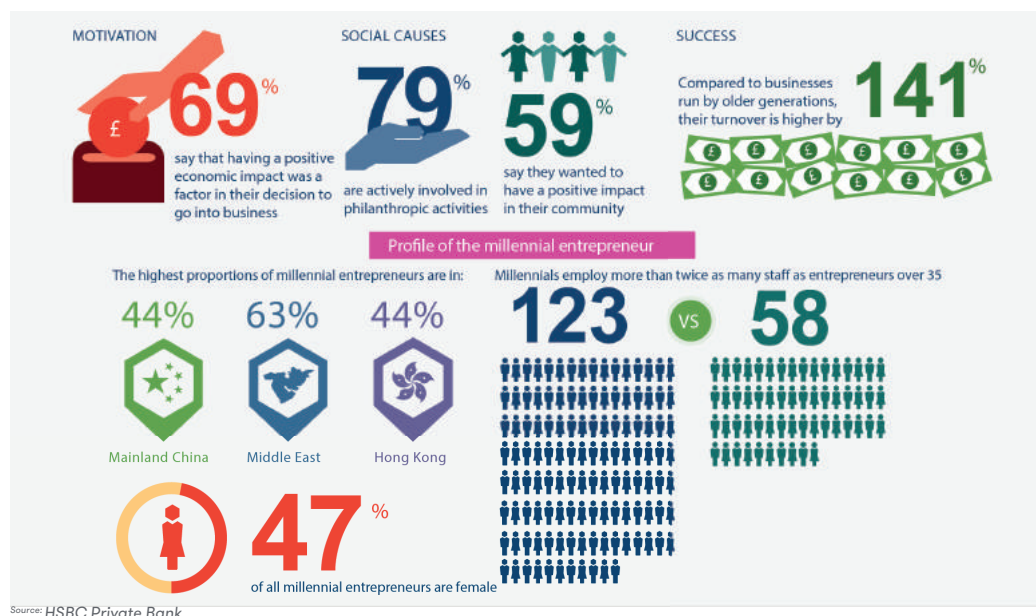
raised by the top 100 start-ups in funding, with each start-up raising more than \$500k individually.

The MENA region is home to over 160mn people, of which 85mn are online, equally two-thirds are adult digital consumers with access to high disposable income and spending power. As economies diversify, digital penetration increases and the youth population become increasingly inquisitive, hence the opportunity for tech investment will flourish further.

The region provides an untapped opportunity for investors, particularly given only 8% of businesses have a digital presence compared to an advanced economy such as the US who have 80% presence. Equally, a recent research highlighted interesting statistics relating to the regions tech ecosystem. The region now has over 3,000 start-ups, with an estimated \$870m+ in investment during 2016¹⁶.

Looking closer at the top 100 start-ups, collectively they have raised over \$1.42bn in funding, with each start-up raising more than \$500k individually¹⁹. Interestingly the UAE was home to over 50% of these top-funded start-ups. The demographic profile of the founders of these start-ups tend to be individuals with over nine years of experience before commencing their entrepreneurial journey, hence the success rate of these businesses looks to be promising.

Furthermore, demographically the region is home to a youthful generation, of which many fit the millennial profile. It therefore is interesting to observe the traits of a millennial entrepreneur, who generate 141%²⁰ more revenue than their senior counterparts.



Source: HSBC Private Bank

¹⁶ TechCrunch and BECO

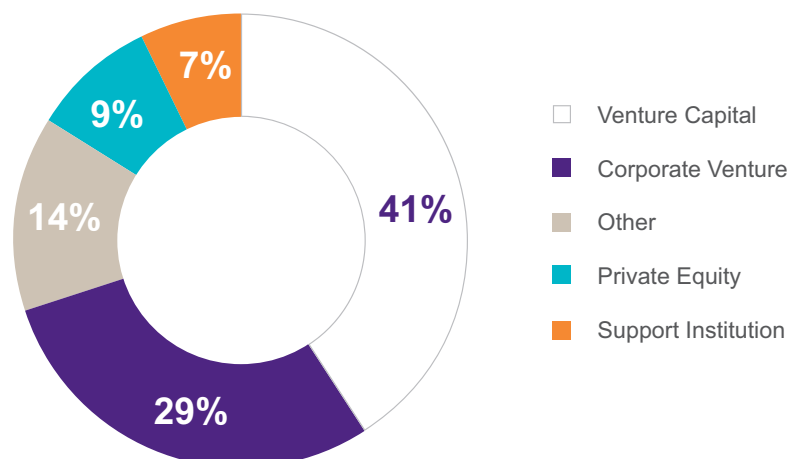
¹⁷ HSBC Private Bank

¹⁸ NYUAD and orient planet research

The MENA region becomes a hotspot for rising entrepreneurs, however the current investor landscape equates to 18⁴ types as denoted below¹⁷. The limited population of investors present opportunities for these institutions to invest in promising portfolios who represent growing industries such as healthcare, where competition will remain limited until a point where the spotlight of the opportunity attracts international investors to shift their focus to promising startups in the MENA region.

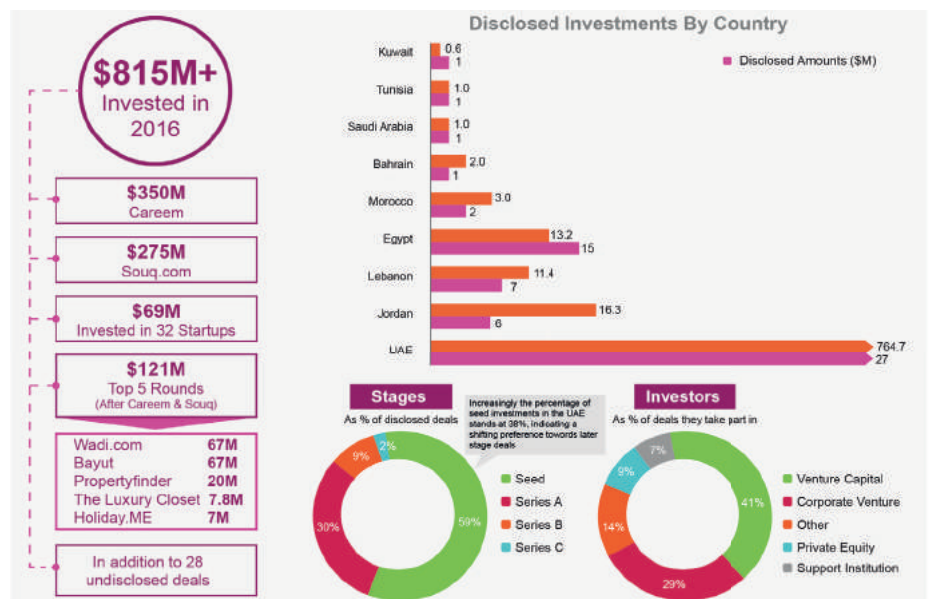
- 44 Incubators and Technology Parks
- 33 Venture capital funders
- 13 Business plan competitions
- 8 Angel or seed investors
- 3 Social venture capital firms
- 7 Online resources on venture capital
- 4 Business networks

Investors
(as % of deals they take part in)



Source: NYUAD and orient planet research

To further quantify the success of MENA start-ups, we look to the top 72 companies who have raised \$815mn in 2016 alone¹⁹



Source: Orient planet research: Future of Arab Startups

¹⁹Orient planet research: Future of Arab Startups

10 reasons to invest in MENA

1

Upcoming mega-economic events within the UAE, KSA, and elsewhere in MENA are significant drivers of industry development.

2

Mandatory Health Insurance (MHI) and other regulatory reform schemes, coupled with a positive employment outlook provide a healthy backdrop for the healthcare industry.

3

Governments across MENA currently invest an average 8% of GDP in the region's healthcare, however they are increasingly seeking private sector involvement and investment through PPPs, private equity, venture capital and other forms of funding.

4

Governments across the region are influencing and encouraging tech-revolution and innovation, therefore a support structure and platform already exists by way of accelerator and incubator hubs for start-ups to leverage from.

5

The Medical Tourism Index 2016 ranked 15 cities from MENA in the top 50, therefore the regions positioning will promote a promising flow of demand in the future.

6

An ageing population will stimulate increased demand for world-class healthcare within the region.

7

Currently a limited number of start-ups have entered this promising industry, therefore the opportunity to penetrate the industry is vast.

8

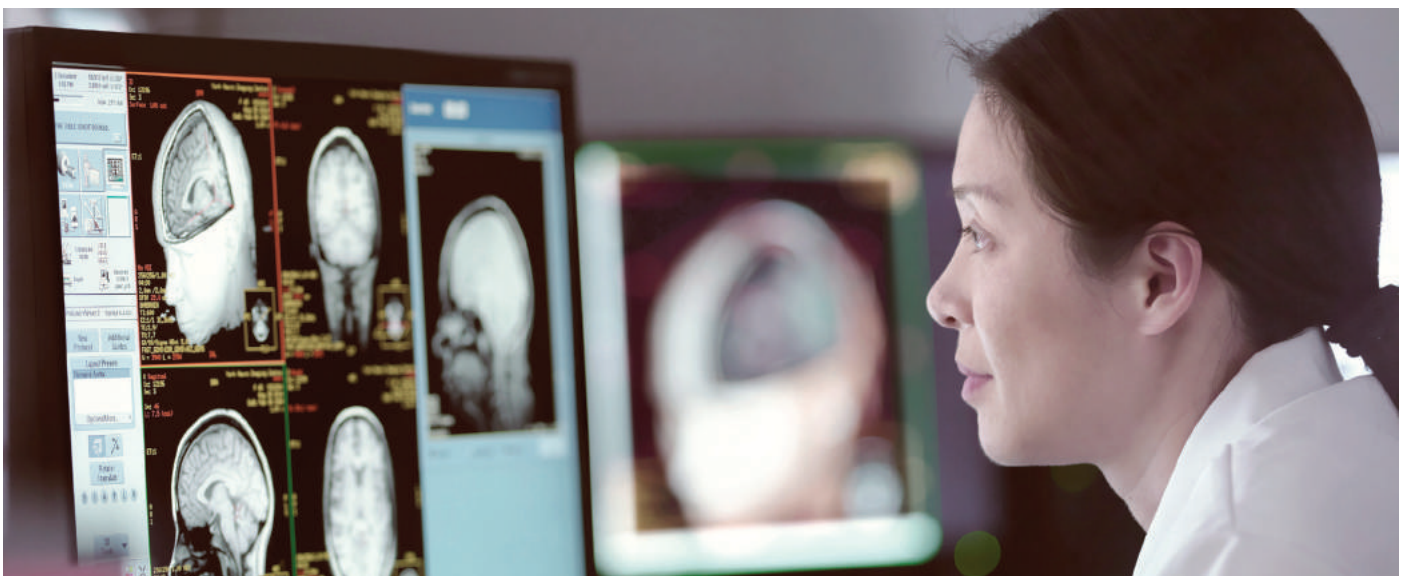
Regional healthcare spending will reach \$150bn across the MENA region by 2020 with the GCC accounting for almost 50% of the share at \$70bn, with a compound annual growth rate (CAGR) of 12% - one of the highest across the globe.

9

Three health-tech firms within the region have been recognised as the MENA Forbes 100 firms, who have received investments of over \$25mn, hence there is proven success in this industry*

10

The region is home to one of the largest mobile and technology penetration levels in the world, hence health-tech uptake will be high.



About Grant Thornton

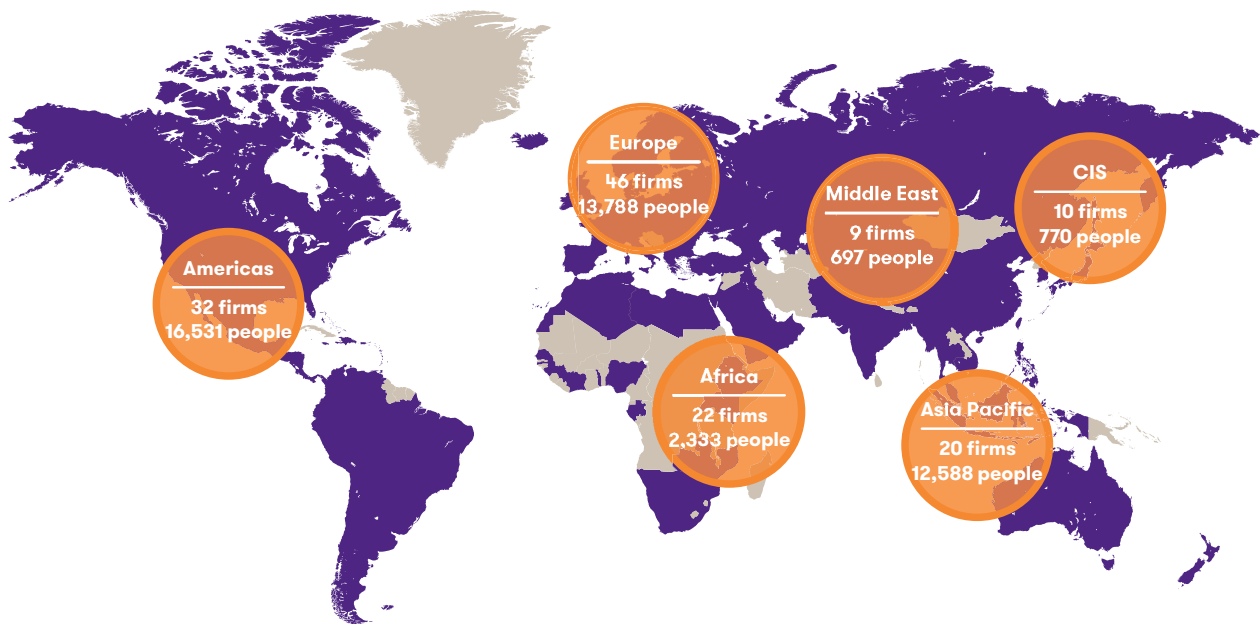
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