UNITED NATIONS
الاسكوا
ESCWA

FINAL REPORT

ACTIVITY No. M424

The Future of Entrepreneurial Ecosystem in the Arab Region

How Complementarity among Arab Countries Can Achieve the UN SDGs

JANUARY 2018

Beirut Research and Innovation Center
Hassan Ghaziri
Tanya Dib

1. Executive Summary

"An entrepreneur is an individual who, rather than working as an employee, runs a small business and assumes all the risks and rewards of a given business venture, idea, or good or service offered for sale. The entrepreneur is commonly seen as a business leader and innovator of new ideas and business processes"
(Investopedia, 2017)

"Innovation and entrepreneurship are closely interwoven".
"The entrepreneur is at the very center of all business activity".
"The Entrepreneur creates 'clusters of innovations' that are the causes of business cycles because their actions create disruptive dislocations and arrive in huge waves"
(Price, 2011)

Objective of this Work

The main objective of this work is to develop an analytical report on the role of innovation and technology in entrepreneurship/start-ups for fostering economic development in the Arab region and achieving the 2030 Agenda for Sustainable Development. The report will overview the status of entrepreneurs and start-ups in innovation and technology sectors in Arab countries. The report will also include:

- Case studies and success stories from Lebanon, Morocco and Oman
- An analysis of challenges and gaps, and identification for mechanisms to overcome them
- A focus on the role of the government in setting a regulatory framework, policies and laws that are conducive to innovation and technology uptake in the start-up ecosystem
- A quantiative data-driven approach combined with qualitative aproach captured by focus groups conducted in designated Arab countries (Lebanon, Morocco and Oman)
- A set of recommendations targeting the public sector, private sector, and civil society on mechanisms to overcome barriers and promote Innovation and Technology for the SDG[1]

[1] ESCWA ToR

Methodology

This complexity of the two concepts of entrepreneurship and entrepreneurs stems from the fact that many actors, institutions, phenomena and processes are taking place in what is called the **entrepreneurial ecosystem**. Central to this work are the following questions, 1) to what extent can an innovation and technology-driven entrepreneurial ecosystem help the Arab region in overcoming its main challenges, difficulties and pitfalls. More specifically, how can this ecosystem contribute achieving the SDGs in this region, and 2) what model is most efficiently applicable in this region and what are the main obstacles preventing Arab countries from growing and sustaining an entrepreneurial ecosystem?

In order to be closer to the real situation, the analysis was not only based on numbers, figures and indicators collected from different international indices, but also involved conducting Focus Group (FG) sessions in each one of the above mentioned countries, gathering representatives from the different actors involved in the individual entrepreneurial ecosystemof those countries. One main purpose of these FGs was bringing together the different stakeholders of the entrepreneurial ecosystem. Another purpose was discussing topics related to entrepreneurship and innovation: start-up creation: internal dynamics of entrepreneurship (leadership, administration, incentives); legal framework (bankruptcy laws, intellectual property, and legal structure of start-ups); collecting funds (access to funding, its challenges and available opportunities – mainly concerning venture capitals), bringing the product to life (prototyping, access to facilities (prototyping labs, fast prototyping labs, fabrications labs, equipment); human capital involved); and escaping the 'death valley' – breaking the market (commercialization, growth, access to market, product sales). Moreover, the FGs served to supplement the metric data (figures and numbers from international indices) gathered on innovation, technology and entrepreneurship in the Arab region.

FG participants were selected in order to ensure proper representation from different levels of the entrepreneurial ecosystem: government, financial and banking sector, academia, legal representatives, accelerators and incubators, and entrepreneurs.

Entrepreneurship Ecosystem: Analysis Framework

The framework of analysis adopted in this report are composed of two dimensions: 1) the ecosystem composed of a set of pillars, and 2) the entrepreneurship stakeholders namely, **the entrepreneur**, the investor, the public authorities, and academia; captured by the FG sessions organised in the 3 Arab countries.

1. **Access to Markets and Ease of Doing Business**: the ability to access markets is the end-goal of all entrepreneurs – to break the market, to have solidified a presence. Essentially, the availability of accessible markets is important for the growth of companies in a region.
2. **Human Capital and Skills**: either makes or breaks a company. There is a high emphasis among entrepreneurs in finding the right team – diversity, experience, skills, and competencies - to ensure the continuation and success of their company.
3. **Funding and Finance**: made up of all the financial mechanisms, entities and structures that are put in place to help support entrepreneurs achieve growth. Access to finance is most often cited as one of the major barriers facing entrepreneurs today – especially pre-seed, seed and early-stage financing.

4. **Network and Support Systems**: essentially made of up of business support mechanisms and systems that are geared towards promoting entrepreneurship and entrepreneurs. These mechanisms can be at the business-level (business development, coaching, mentoring), skills-level (workshops, training, technical support), or financial-level (awards, competitions).
5. **Government and Regulatory Framework**: the government plays an essential role in the promotion of innovation, technology and entrepreneurship in a country. Knowing this, certain government barriers and increased bureaucratic procedures can often hinder the ease of starting a business (ex. registering the company), maintaining it (ex. access to financial and business support), and even closing it (ex. filing for bankruptcy).
6. **Universities, Education and Training**: academia as a catalyst - universities and the educational system play an important role in breeding an entrepreneurial spirit and culture in a country's youth, not to mention in building their entrepreneurial skills and competencies through designated entrepreneurship education and training. Moreover, through their programs, universities can promote innovation and entrepreneurship through academia-industry collaboration (matching students to the job market).
7. **Physical Infrastructure**: very much tied to the pillar on Government and Regulatory Framework, accessing basic infrastructure (electricity, telecommunication, hardware, co-working spaces, prototyping/fabrication labs, etc.) is one of the important elements that are conducive to a healthy entrepreneurial ecosystem.

It is important to highlight here that an analysis of an entrepreneurial ecosystem without contextual reference to its impact on sustainable, harmonious and well-balanced development will provide false impressions, deceiving numbers and rankings, and hence inadequate policies and inefficient recommendations. Therefore, this report embeds the **Sustainable Development Goals (SDGs)** in the framework of analysis and in the formulation of the recommendations.

Situation Analysis in the World and the Arab Region

Innovation and technology have become key to finding solutions to the most pressing and persistent social, economic and environmental needs and challenges communities face today. The 2030 Agenda for Sustainable Development came with a set of Sustainable Development Goals (SDGs) that affirm the importance of technology and innovation. For achieving the SDGs, the 2030 Agenda acknowledges the importance of involving various stakeholders and the responsibility of all actors in contributing to fulfilling them.

The Global Entrepreneurial Economy

Governments and entrepreneurial ecosystem supporters worldwide have shared the perspective that entrepreneurship and innovation fosters economic growth and addresses unemployment issues, and have put "their money where their mouth is". The below figure shows the evolution of the global venture capital market since 2010. A sharp and steady increase between 2010 and 2014 is clearly shown.

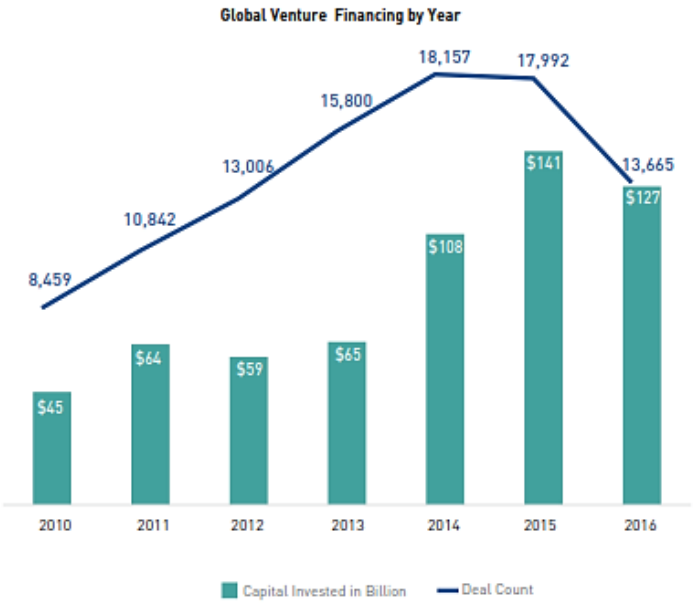


Figure 1: Global venture financing per year (ArabNet Business Intelligence, 2017)

Assessing the Arab Entrepreneurial Ecosystem

The Global Entrepreneurship Index (GEI), developed by the Global Entrepreneurship and Development Institute, is one of several endeavours to calculate one composite index that measures entrepreneurship. In the GEI 2018 rankings, Qatar in ranked 22nd/137 countries after UAE (26th), however, the total number of disclosed deals in start-ups between the year 2013 and 2016 was extremely low compared to that of UAE. This observation should remind us that we have to handle these numbers with extreme care and maintain our attention focused on the real economy and not on its quantitative represention. **Top movers between 2016 and 2017 are Tunisia improving 20 ranks while Lebanon is regressing 13 ranks**. It is important to undertand the reasons of these changes, if they are persistent or accidental due to indegenuous or exogenuous factors.

Access to Markets and Ease of Doing Business

One way to address the issue of access to markets for entrepreneurs, especially in the Arab region, is in the **facilitation of free movement of goods, people (human capital) and companies**, which would provide a significant boost to start-ups and businesses. Moreover, concerning the ease of doing business (World Bank's Doing Business 2017 MENA Regional Profile), the **MENA region on average scored 56.36% as compared to the rest of the world**.

Case of Lebanon

- Key challenges that entrepreneurs are facing today in Lebanon are the 1) high cost of failure, 2) lack of role models and mentors, 3) limited management expertise, 4) lack of trust and 5) limited access to smart capital (Endeavor, 2016).
- In the World Bank Doing Business 2018 rankings, in comparison to other MENA countries, Lebanon (Rank 133/190) falls behind Egypt (Rank 128), Jordan (Rank 103) and Saudi Arabia (Rank 92) (World Bank, 2017e).
- In 2009, Lebanon made it easier to register a company by streamlining its business registration process, however, in 2011, went on to increase the cost of starting a business, which is a change that makes it more difficult to do business. So, this proves that there are some major discrepancies in the approach to doing business in the country that need to be addressed accordingly (World Bank, 2017f).
- Notably, access to market was made a priority issue in **Lebanon's 2014 SME Strategy by the Ministry of Economy and Trade**. The strategy to improve access to markets "aims at minimizing structural market inefficiencies to improve SME competitiveness, and enhancing access to foreign markets and in particular to fast-growing economies and ones where Lebanon has an edge" (Ministry of Economy and Trade - UNDP, 2014).

Case of Morocco

- On WEF's Global Competitiveness Index, Morocco ranked 70 out of 138 countries in 2016, and it has had a net competitiveness increase of 1.7% since 2007, at which point it had a value of 4.08 out of 7, relative to the 2016 value of 4.20 (World Economic Forum, 2016).
- Another index to consider regarding Morocco's advancement towards entrepreneurial openness is the Global Innovation Index (GII). Morocco has had a net increase in its GII since 2013, having improved from a score of 30.9% in 2013 to 32.7% in 2017 (WIPO-INSEAD-Cornell University, 2017). Moreover, Morocco is one of only two Arab countries for which the GII ranking has not decreased between 2011 and 2016[2].
- In regards to fostering entrepreneurship in the country, the **National Agency for the Promotion of Small and Medium-sized Enterprises** (ANPME) or **Morocco SMEs (MarocPME in French)**, under the Ministry of Industry, Investment, Trade and Digital Economy, "is at the heart of the system for supporting Moroccan companies and represents the main operational instrument of public authorities for development of SMEs" (MCINET, 2017).

[2] Innovation Landscape Arab Region ESCWA, p. 9

Case of Oman

- In order to fuel their entrepreneurial ecosystem and their national economy, the Sultanate's Supreme Council for Planning has developed a Vision 2020, where much of the plan is in direct alignment with SDGs 8, 9, and 10. It includes themes such as maintaining environmental integrity while developing the private sector, creating "favorable conditions for economic diversification", as well as enhancing citizens' standard of living and reducing disparities.
- One recent policy change in particular increased Oman's ranking in the World Bank's Starting a Business metric from 159th in 2016 to 32nd in 2017. Oman accomplished this "by removing the requirement to pay the minimum capital within three months of incorporation and streamlining the registration of employees."
- Another innovative reform from 2012 was to introduce a **One-stop government website** to streamline the business registration process. This was accomplished using a new **Invest Easy e-governance platform** where entrepreneurs can fulfill all the appropriate financial and registration obligations for their businesses using an accelerated and open online process.
- **Riyada** is the Public Authority for SME Development in Oman, and it provides a number of resources such as feasibility studies, toolkits, mentorship, as well as access to all applicable laws and regulations for small enterprises. It is an excellent contact point for the aspiring Omani entrepreneur to learn about all of the available support structures, both in the private and public domains.

Education, Universities and Human Capital/Skills

According to the the World Economic Forum's Human Capital Index, the Arab Region captures less than 60% of its full human capital potential (compared to a global average of 65%). Socio-cultural factors and traditions still affect Arab youth, the result of which are thousands of young, talented Arab men and women who, instead of becoming change-makers in their region, are struggling with unemployment due to a saturated job market. In the Arab world, 27% of youth aged 15-24 years old is unemployed (Aqrabawi, 2017). Empowering youth drives change and the best way to drive change is through entrepreneurship – more importantly – through youth entrepreneurship, and this needs to start with education, both at school and university.

Case of Lebanon

- At the **school-level**, INJAZ Al-Arab and notably, **INJAZ-Lebanon** are working towards promoting youth experiential learning in workforce readiness, financial literacy and entrepreneurship in the Arab region. At the **university-level**, top institutions such as AUB's Center for Research and Innovation (CRInn), AUB CRInn Riyada, LAU Institute of Family and Entrepreneurial Business, BAU's Center for Entrepreneurship (academic incubator), and ESA Business School are creating much support for entrepreneurs in Lebanon.
- In Lebanon, however, **female engagement in SMEs has been low in Lebanon** and, not to mention, a low participation of women in high leadership positions in those enterprises. Much of this stems from the overarching patriarchal culture that still exists in the country, coupled with an ecosystem and supportive environment that, even though has been growing in the last few years, still remains not up to par for women in comparison to those in European countries for instance.

- Even so, in Lebanon, there have been many efforts made to combat this and promote gender-inclusivity in the Entrepreneurial ecosystem, just like BLC Bank's Women Empowerment (WE) Initiative for instance, which is a platform that connects women together through forums and discussions. The platform includes the SME Toolkit that is designed for start-ups and entrepreneurs. Other examples include the Cartier Women's Initiative Awards and the Femme Francophone Entrepreneure competition, organized by AUF, Berytech, L'Orient Le Jour and Commerce du Levant.

Case of Morocco

- The biggest challenge facing Moroccan entrepreneurs truly boils down to attracting and maintaining the right team – human capital that is skilled and qualified to meet start-up needs.
- A number of Moroccan university programs have been developed in recent years which aid in the development of innovation and entrepreneurship, such as the **Emines School of Industrial Management of the Mohammed VI Polytechnic University in Ben Guerir**, with a mission to prepare students to become entrepreneurs, and the French **EmLyon Business School**, which has a campus in Casablanca and three MS programs, one of which is exclusively dedicated to entrepreneurship, and is accredited by the Conférence des Grandes Écoles (CGE); it aims to create specialists in small business.[3] The business school is also affiliated with a successful start-up incubator in Lyon, France. Furthermore, the **ESCA Écoles de Management**, a business school in Casablanca, has a program in entrepreneurship and international development which exposes students to a broad range of entrepreneurship courses[4].

Case of Oman

- **The Global Talent Competitiveness Index 2017** ranked Oman 9th among 18 Arab MENA countries and 59th overall out of all analyzed economies (118 economies).
- The **SME Development Fund**, a government-academia initiative, is working with a number of academic institutions in cooperation with the Ministry of Higher Education in Oman including Sultan Qaboos University where they run the **Entrepreneurial Campus** programme. In 2016, the programme was introduced in 18 colleges serving 1,200 students through 11 clubs.
- The Entrepreneurial Campus programme is integrated with existing initiatives on campus. **"Al Namaa" Entrepreneurship Society** acts as a platform that raises awareness and carries out a variety of activities including but not limited to: lectures, contests and visits to and by entrepreneurs. Other components such as the volunteer faculty, advanced module, alumni outreach, and senior entrepreneur module also constitute the Entrepreneurial Campus programme.

[3] http://casablanca.em-lyon.com/masteres-specialises/m-s-entreprendre/
[4] http://www.esca.ma/en/programs/entrepreneurship_and_international_development_track

Funding and Access to Capital Markets

Most investments in the MENA region made between 2013 and 2016 were allocated to the early stages which gives an indication that the Arab entrepreneurial ecosystem is still an emerging one, far from maturity.

According to the International Finance Corporation (IFC), almost 63% of micro-and SMEs in the region have no access to finance (Ghandour, 2016). At the same time, the UAE continues to build a robust investor community, capturing a slightly increasing share of the overall investor market. Lebanon has also attracted a rapidly growing proportion of the investor community – with the share of the top three markets (UAE, KSA, Lebanon) growing from 55% to 64% of investors from 2013 to 2016 (El Amine, 2017).

Case of Lebanon

- One cannot talk about the entrepreneurial ecosystem in Lebanon without paying tribute to the country's Central Bank - Banque du Liban (BDL), the main actor governing the financial ecosystem and provides businesses and SMEs with the necessary access to finance, and its flagship law Circular 331 and its amendments.
- **To date, $300-$320 million have been raised with around half this amount invested in over 40 start-ups**. This surge of money has "spurred the creation of new venture capital funds which cover the various levels of funding (seed, growth, and series B), new accelerators, and new co-working spaces" – support mechanisms that have been highly conducive for the establishment of innovative start-ups in the country.
- However, Circular 331 has had some notable pitfalls since its enactment, but recent amendments, namely **Circular 454** have allowed for start-ups, who were previously not allowed to engage in any foreign, direct or indirect, investments, to now "buy services and equipment abroad should they be unavailable in Lebanon" (Wamda, 2017b).
- One of the major and most recurring challenges that face entrepreneurs in Lebanon is the lack of pre-seed and seed funding. There is a missing middle ground that should fill in the gap before reaching venture capital investment, which has become much more widespread (**10+ VCs in Lebanon alone**), as opposed to Angel Investments (**Bader's Lebanon Business Angels** and most recently **Seeders Master Class for Business Angels**) or Crowdfunding platforms (only **Zoomaal** for the entire MENA region).

Case of Morocco

- In the Getting Credit metric of the World Bank's Doing Business 2018 survey, Morocco ranked 105th out of 190 countries measured by this metric, indicating it as an inhibitor to business growth. The reason for this is mainly the risk-aversion of investors.

- Venture capital which would be advantageous for upcoming start-ups remains underdeveloped in the country and in order to address this issue, the Government of Morocco established the **Innov Invest Fund**[5] in 2016 to "leverage USD 50 million in financing from the World Bank Group to plug gaps in equity financing for start-ups".
- Another notable venture capital in the Moroccan financial scene is the **Maroc Numeric Fund (MNF).** Additionally, **MITC Capital**, MNF's management company, has set up **MNF Angels**, whose main mission is to select technology start-up projects with high-growth potential, provide technical assistance to both entrepreneurs and business angels, including financial, strategic and legal aspects and support their investors in the preparation of investment files in order to present them to the MNF Angel club members (Maroc Numeric Fund, 2017).

Case of Oman

- There are several private-sector incubation centers for entrepreneurs to obtain support and access to funding in Oman.
- From the Zubair Corporation, **Zubair Small Enterprise Center** (Zubair SEC) arose as a private sector incubator and professional network to support small businesses. Businesses incubated at Zubair SEC are more likely to financially benefit from the network that it provides rather than from a funding structure available within the incubator. They do, however, provide qualified members of their dedicated **Direct Support Programme** with financial grants.
- However, by the standard of the World Bank's Doing Business 2018 survey, Oman has room for improvement with regards to granting entrepreneurs the necessary credit to start their enterprises. Oman was ranked 133rd out of 190 economies in the Getting Credit metric.
- The majority of the support structures that are available for Omani entrepreneurs are hosted by the **Knowledge Oasis Muscat (KOM),** a technology park which was opened in 2003.

[5] **Innov Invest Fund**: The financing program is implemented by the Caisse Centrale de Garantie (CCG), which provides pre-seed, seed, and venture capital to innovative young firms. Moreover, the Fund will support "training, incubators, and acceleration activities for project developers, both through intermediaries in the financial ecosystem and through strengthening an angel investors' network".

Stakeholders' Perspective

Table 1: Main stakeholders' perspectives on entrepreneurship in Lebanon, Morocco and Oman, extracted from the Focus Groups sessions conducted in each country (October – December 2017)

Main Perspectives	Lebanon	Morocco	Oman
Entrepreneurs	• Changing the risk-averse attitudes of VCs • Modernizing VC models to become more adaptive to start-up needs • Promoting a spirit of entrepreneurship among youth • Promoting mentorship • Addressing infrastructural barriers (water, electricity, telecom, transport) • Diversifying sector-oriented ecosystem support mechanisms (more support to social initiatives, not only to tech) • Updating laws and regulations to reflect the current reality and needs of start-ups (ex. bankruptcy laws, IP laws) • Promoting public-private partnerships	• Facilitating government procedures to reduce bureaucracy and restrictions to starting, maintaining and closing business • Allocating more funding to R&D • Enhancing support structures for accessing competent and talented human capital • Enhancing the uptake/absorption of start-ups in the market (industry-start-up collaboration)	• Reducing restrictions on the mobility of human capital, especially for hiring and registering talent • Enhancing IP protection laws and regulations • Facilitating access to finance for start-up from government agencies – reducing payment delays and bureaucratic procedures
Investors	• Establishing more seed-oriented VC funds • Promoting regulations for the establishment of SAS[6]s, which are more beneficial to entrepreneurs than traditional SARLs or SALs • Increasing access to low-cost services and support mechanisms such as ICT, networking, coding, etc. • Establishing bankruptcy laws • Promoting more hardware-oriented facilities and services (ex. fab labs, prototyping labs) • Enhancing IP laws and regulations – more protection for entrepreneurs	• Establishing a 'City of Innovation' to follow up on R&D activities (ex. possible patents) • Enhancing inter-agency coordination at the ministerial level (ex. between Ministry of Industry and Ministry of Economy and Finance)	• Enhancing bureaucratic procedures to facilitate company registration and overall ease of doing business • Reducing/eliminating sanctions on start-ups, especially concerning acquiring and retaining talent (enhancing mobility of human capital) • Enhancing bankruptcy laws • Promoting a national agenda for innovation and entrepreneurship • Introducing Key Performance Indices (KPIs) to enhance accountability, especially among government authorities

[6] SAS: Societé par Actions Simplifiée

	• Engaging the Lebanese Diaspora more • Connecting with other regional entrepreneurial ecosystems to bridge the networking gap • Lobbying for the establishment of a 'Ministry of Innovation' • Streamlining company creation and registration procedures		
Universities	• Promoting entrepreneurship at the school and university level • Mainstreaming a culture of failure among youth to reduce its stigma and societal pressure on entrepreneurs • Protecting IP of student and faculty entrepreneurs	• Promoting mechanisms for Technology Transfer, such as Technology Transfer Offices (TTOs) • Facilitating the procedures for university staff to establish spin-off companies and/or start-ups • Promoting student entrepreneurship by granting students entrepreneurial-academic statuses (ex. Statut Etudiant Entrepreneur)	• Promoting R&D and access to financing from government agencies • Opening up to collaboration from other Arab countries to promote shared R&D interests
Public Authorities	• Amending IPR laws and regulations • Promoting a reforms package for SMEs by the Ministry of Economy and Trade (codes of commerce, bankruptcy laws, amendments to the Investment Law 360, insolvency laws, e-payment) • Increasing coordination among governmental authorities to reduce duplication of efforts to further meet entrepreneurs' needs • Preparing and training lawyers on the specificities of the entrepreneurial ecosystem, especially with VCs (terms, nomenclature, operations, etc.) • Raising awareness among upcoming lawyers about entrepreneurship – collaboration with the Beirut Bar Association	• Promoting the participation of large corporations in the entrepreneurial ecosystem – integrate more innovation and entrepreneurship in company strategies • Reducing the risk-averse attitude of investors to promote dealflow • Enhancing public-private partnerships and their strategies • Setting up a Technology Transfer law • Supporting doctoral students in their pursuits of entrepreneurship ventures → facilitate the regulations • Promoting practical and hands-on working experience for prospective student entrepreneurs, and not only theoretical entrepreneurship education	• Reducing government restrictions, strict regulations, and institutional (bureaucratic) barriers • Fighting corruption and conflict of interest at the level of the government, not to mention some private sector entities

	• Establishing a recommendation committee within a government unit responsible for innovation, technology and entrepreneurship in the country		

Lessons from International Entrepreneurial Ecosystems

France: Bpifrance

Standing for **B**anque **P**ublique D'**I**nvestissement France, Bpifrance's mission is to provide assistance and financial support to small and medium-sized enterprises (SMEs), facilitating access to banks and equity capital investors, in particular during the high-risk phases: Start-up, Innovation, Development, and Buy-Out. It is a financial institution acting in the French regions that supports SMEs through a decentralized network of **37 regional offices**, being in direct contact with the entrepreneurs and their partners: 90% of decisions are being made at the regional level (Bpifrance, 2017).

Malaysia

In 2011, the Malaysian government decided to develop the **New Economic Model (NEM) approach**, whose "overall purpose is to grow Malaysia's economy so that Malaysia can become a developed country by 2020 by transforming it from one that is led by the government to one that is market and private sector-driven" (Wan Jan, 2011). The NEM is therefore a strategy to bring Malaysia out of its "middle-income trap".

The drive to shift the country from a resource-led economy to an innovation-led economy came forth in 2007 with the adoption of the **Malaysian National Innovation Model (MNIM).** Given that in earlier years, Malaysia had difficulties getting their innovations to market, even though the country heavily pursued R&D activities but without much attention to market needs, leading to poor levels of commercialization. Therefore, in order to address this need, the MNIM "introduced the **market pull approach** for short and medium-term results, complementing the longer-term target from the **technology push approach**" (Wan Jan, 2011).

Findings and Recommendations

Recommendations for Specific Components of the Entrepreneurial Ecosystem

Table 2: Findings, recommendations across main entrepreneurial pillars, and systemic regional recommendations

	Findings	Recommendations
Access to Market	• Each country in the MENA 'market' has its own, varying, set of systems, laws and regulations, which impose some limitations to the promotion of entrepreneurship. • Among the most successful start-ups attracting funding and investments are from the e-commerce sector • MENA region lags behind on internationalization	• Facilitation of free movement of goods, people (human capital) and companies, which would provide a significant boost to start-ups and businesses • Strengthening the links with the Arab Diaspora to open up new markets for Arab entrepreneurs • Expanding the market information for entrepreneurs and helping them in participating to international exhibitions by creating special funds for this purpose
Access to Finance	• Funding is concentrated in the early stages of the start-up chain. • Start-ups have difficulties to find funds at the pre-seed and seed stages and there is a risk of not finding enough funds for the later stages, Series C and above.	• Promoting the Angel Networks among the successful entrepreneurs in the Arab countries and in the Diaspora through Angel Clubs, for example • Promoting and facilitating the foreign investments in growth stage Arab start-ups • Creating specialized funds for pre-seed financing for Minimum Viable Product (MVP) and for experimental prototypes
Human Capital / Access to Skills	• Strong investment in primary, secondary and higher education • Gap in the quality of highly skilled staff • Lack of highly skilled people in ICT • Inadequacy in the university offer in the market needs • Important brain drain • Few graduates engaged in research	• Making higher education more adapted to the needs of the economy by creating incentives for university-business collaboration • Improving the agility of the skilled labor through the development of continuing education adapted to the changes in the economy • Creating incentives for academia to conduct research and to promote entrepreneurship among academic staff and students • Supporting transfer of technology between universities and industries through Technology Transfer Offices (TTOs) at the level of the universities with the support at the national level for enhancing the

	activities • High unemployment rate among university graduates	mechanisms of transfer and providing highly-skilled experts
Legal Framework and Public Policies	• Conflicting interests among the different entities of the public sector • Fragmentation of the initiatives • Lack of follow-up on the implementation of strategies and plans • Lack of clear and enforced Intellectual Property Laws • Absence of tax incentives for supporting start-ups • Need for streamlining the administrative procedures for starting a business	• Creating a One-stop Shop to facilitate the business registration procedures • Strengthening the institutional capacity for monitoring and evaluation (M&E) • Integrating M&E at every component of the entrepreneurial ecosystem, based on real, complete and continuously updated data, which requires Observatories for the assessment of the national entrepreneurial ecosystems • Issuing and empowering up-to-date Intellectual Property Rights laws, tax incentives for investors and early start-up companies, and tax exemptions for the start-ups for a designated amount of years (3-10 years)
Systemic and Regional Recommendations	• Creating an Arab Intellectual Property Organization facilitating both the filing and enforcement procedures to avoid outsourcing to other countries • Launching an Arab program to support start-ups across the region, founded by entrepreneurs from the different Arab countries • Establishing a digital platform putting in contact investors, entrepreneurs, researchers and policy makers, and providing information about technology institutions, universities, incubators, accelerators, and industries	

Recommendations for Specific Actors

Table 3: Recommendations for specific actors of the Arab entrepreneurial ecosystem, showcasing the contribution of policy each one to the implementation of the SDGs

No.	Actor	Policy Description	Objective	Contirbution to the Implementation of SDGs
1.	**Arab League**	- Building a platform linking Arab researchers and experts all over the world to promote support for R&D – -Taking advantage of the Diaspora and reducing the impact of brain drain	Strengthening the knowledge generation and technologies production	**In reference to Goal 17:** - The main purpose of this policy is to enhance South-South and international cooperation, as indicated in Target 17.6. - It will enhance North-South cooperation by tapping into the potential of the Arab Diaspora. - It promotes the transfer dissemination and diffusion of new technologies as indicated by Target 17.7. - It will enhance also the technology and innovation capacity building mechanisms, as indicated in Target 17.8.
		Creating matching funds between universities and industries or researchers and entrepreneurs for seed projects	Bridging Universities and entrepreneurial ecosystem	**In reference to Goal 9:** This policy will enhance the technological infrastructure and promote public-private collaboration on research and innovation, as indicated in Target 9.5.
2.	**Ministries of Economy**	- Updating the IPR law - Clarifying the status of software applications - Issuing guidelines and code of practice for universities and businesses to supplement the laws and contribute to trust building measures between universities and businesses - Establishing a fund for patenting to which universities, industries or individuals can apply	Enhancing linkages between supply and demand – Knowledge and technology transfer	**In reference to Goal 8:** - This policy will support productive activities and creativity, as indicated in Target 8.3. - It will promote the industrial diversification, sophistication and value addition to services and commodities, as indicated in Target 9.b.
3.	**Ministries of Telecommunications**	Improving the quality and reducing the cost of telecommunications services	Supporting the demand side of innovation	**In reference to Goal 9:** This policy will contribute to increasing access to ICT and provide affordable access to the internet, as indicated in Target 9.c.

4.	**Universities**	- Promoting research and innovation by releasing research-oriented faculty from teaching credits - Promotion rules, career advancement and job offering should include patents, research collaborations, and projects with other universities and the industrial sector as important criteria. This is an incentive for researchers to engage in innovation activities - Extending the functions of university laboratories to include innovative research and not only teaching and promoting their exploitation by external entities - Creating new career opportunities for professional researchers and research technicians at the university	Strengthening the knowledge generation and technologies production	**In reference to Goal 4:** - This policy will contribute to increasing the number of graduates and faculty members who have relevant skills for employment and entrepreneurship, as indicated in Target 4.4.
		- Redefining the legal status of universities allowing universities to engage in licensing and commercializing the technologies produced by its researchers, and private universities to adapt their non-profit status. - Relaxing or removing regulations that prevent faculty members from	Enhancing linkages between supply and demand – Knowledge and technology transfer	

		working with private sector and business community or establishing new company - Establishing TTU - Adoption of a clear IPR policy such as the one submitted by ESCWA		
		Establishing an industrial PhD program with possible extension to industries	Enhancing linkages between supply and demand – Knowledge and technology transfer	
5.	**Executive Authorities such as Council of Ministers, Prime Minister Office**	Preparing a technology transfer law	Enhancing linkages between supply and demand – Knowledge and technology transfer	**In reference to Goal 9:** This policy should upgrade the technological capabilities of industrial and productive sectors, as indicated in Target 9.5.
		- Establish an advisory committee promoting the collaboration between the different public authorities and external experts to coordinate entrepreneurial policies making throughout all public institutions - Giving guidance and refining agencies' governance	Defining systemic measures at the state level	**In reference to Goal 9:** It contributes to build and promote inclusive and sustainable industrialization and fostering innovation.
6.	**Financial Institutions such as BDL (Lebanon), CCG (Morocco)**	- Funding early stage innovation projects. The adequate measures can take different forms such as financing fast prototyping labs or creating dedicated funds for these highly risky and uncertain but critical innovation projects	Supporting most risky and uncertain stage of the entrepreneurship process	**In reference to Goal 8:** - This policy promotes inclusive and sustainable economic growth. - This policy supports productive activities through access to financial services, as indicated in Target 8.3.

		- Subsidizing the purchase by SMEs and Industries of an innovation. This is similar to the subsidies of renewable energies for environment protection.	Supporting access to finance	
		- Establishing an entity to support early stage innovation	Fostering the financial ecosystem	
7.	**Ministries of Industry**	Tax incentives law that can take different forms including tax credits, special allowances, special exemptions and accelerated depreciation	Supporting the demand side of innovation	**In reference to Goal 9:** - This policy promotes sustainable economic productivity. **In reference to Goal 12:** - This policy also strengthens the scientific and technological capacity, allowing Arab countries to move towards more competitive patterns of production, as indicated in Target 12.a.
8.	**Various State Actors**	- Encouraging the culture of entrepreneurship and creativity in schools by adopting non-conventional educational methods	Strengthening the entrepreneurial culture	**In reference to Goals 4 and 17:** - These policies contribute collectively in promoting lifelong opportunities for all, through entrepreneurship education, that will, in turn, help promote decent employment. - Moreover, building the institutional capacity of governmental entities towards M&E at all stages of the entrepreneurial process equally strengthens the means implementation of these SDGs, as indicated via Goal 17.
		Preparing procurement policies to catalyze local start-ups	Supporting the demand side of the entrepreneurial ecosystem	
		- Strengthening institutional capacity for M&E - Integrating M&E in every stage of the process	Defining systemic measures at the state level	

2. Introduction

Objective of this Work

According to the Term of Reference, the main objective of this work is to develop an analytical report on the role of Innovation and Technology in entrepreneurship/start-ups for fostering economic development in the Arab region and achieving the 2030 Agenda for Sustainable Development. The report will overview the status of entrepreneurs and start-ups in Innovation and Technology sectors in Arab countries, analyze challenges and gaps, and identify mechanisms to overcome them[7].

It will showcase success stories and case studies from selected developing countries from the Arab region and around the world to share knowledge on best practices. It will tackle the role of government in setting a regulatory framework, policies and laws that are conducive to innovation and technology uptake in the start-up ecosystem. The report will provide a set of recommendations targeting the public sector, private sector, and civil society on mechanisms to overcome barriers and promote Innovation and Technology for the SDG[8].

This work should to generate a more informed debate about the role of entrepreneurial ecosystems in the stimulation of economic growth and job creation. It investigates the nature, the structure and the deployment of Arab Entrepreneurial ecosystem. Although each Arab country has its specific characteristics, we will adopt the same framework of analysis that we designed based on quantitative data-driven approach combined with qualitative approach captured by focus groups conducted in designated Arab countries (Lebanon, Morocco and Oman).

3. Preliminary Definitions: The Entrepreneur, the Start-up, and the Entrepreneurial Ecosystem

Defining the Term Entrepreneur through its Historical Evolution

Let us start by a quick definition of the term entrepreneur. Flash forward to the 21st century, the definition of entrepreneur has come a long way from its 18th century French roots – culminating an entrepreneur as *"a person who organizes and operates a business by taking a financial risk"* (Hoque, 2013) – reaching today, more hearty definitions:

[7] ESCWA ToR
[8] Ibid

"An entrepreneur is an individual who, rather than working as an employee, runs a small business and assumes all the risks and rewards of a given business venture, idea, or good or service offered for sale. The entrepreneur is commonly seen as a business leader and innovator of new ideas and business processes" (Investopedia, 2017)

Austrian-American economist, Joseph Alois Schumpeter, placed *emphasis on innovation* and wrote in his book, The Theory of Economic Development (first published in 1911), that innovation and creativeness are what distinguished Entrepreneurs from other business people.

"Innovation and entrepreneurship are closely interwoven".
"The entrepreneur is at the very center of all business activity".
"The Entrepreneur creates 'clusters of innovations' that are the causes of business cycles because their actions create disruptive dislocations and arrive in huge waves" (Price, 2011)

Moreover, Schumpeter coined the phrase *"Creative Destruction"* referring to the fact that an Entrepreneur not only invents new things, but also *"exploits in novel ways what has already been invented"* (Price, 2011). Accordingly, 5 types of Entrepreneurial Activities were identified:

1. New product innovation or the introduction of a new service
2. New process innovation or new methods of production
3. Market innovation or the opening of new markets
4. Input or resources innovation
5. Organizational innovation, which is the complete restructuring of an entire industry or the breaking up of a monopoly

Entrepreneurship vs. Small Business // Entrepreneur vs. Small Business Owner

Further distinctions are made between what is considered Entrepreneurship versus Small Business, indicating a distinction between an Entrepreneur and a Small Business Owner. Although similarities are shared between the two concepts, they differ in the following ways (Internet Center for Management and Business Administration, 2010):

Table 4: Distinctions made between the concepts of Entrepreneurship vs. Small Business

Factor	Distinction	
	Entrepreneur	**Small Business Owner**
Amount of Wealth Created	Successful entrepreneurial ventures generate substantial wealth – in excess of several millions of dollars	Generates income stream that generally replaces traditional employment
Speed of Wealth Created	Substantial income may be generated in only 5 years, for example.	Substantial income is generated over a lifetime
Risk	High risk – risk of failure BUTless people pursuing similar ideas → more opportunities are created, higher margin of accumulating large wealth in less time	Lower risk – leading to more people pursuing similar ideas → opportunities diminish
Innovation	Higher level of innovation – either in products or services or in the processes used to deliver them Higher competitive advantage → higher wealth creation	Less likely to be able to showcase innovation or innovative ideas, products, services or processes.

What is a Start-up and How Does It Differ from an SME?

A **start-up company** is an entrepreneurial venture which is typically a newly emerged, fast-growing business that aims to meet a marketplace need by developing a viable business model around an innovative product, service, process or a platform. A startup is usually a company designed to effectively develop and validate a scalable business model. Start-ups have high rates of failure, but the minority of successes include companies that have become largeand influential.

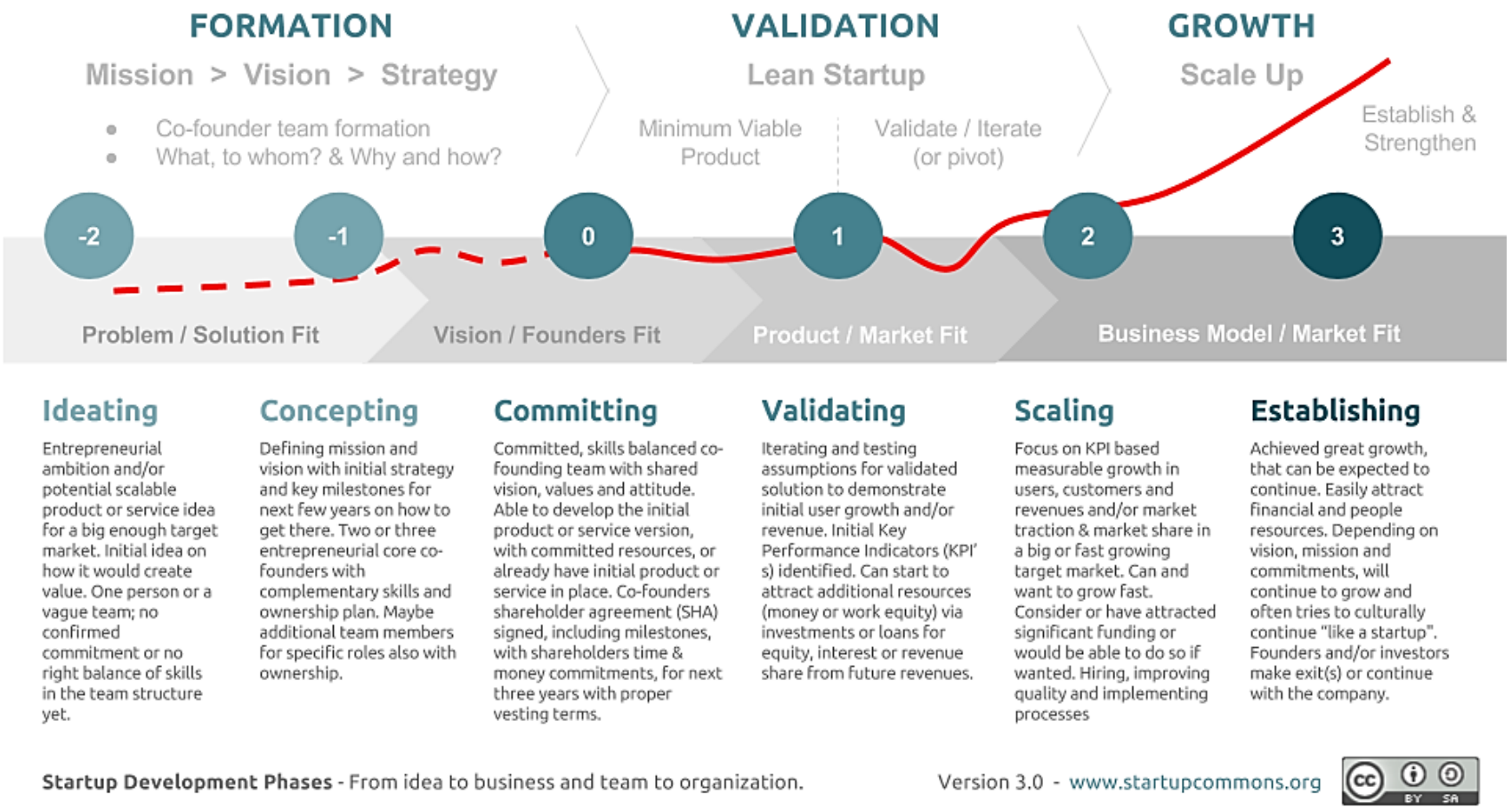


Figure 2: Start-up development phases

The Difference between Start-ups and Small Businesses. High growth technology startups are very different from other businesses. If you begin a traditional small business, your odds of succeeding for the first two years are pretty good — around 75%. On the other hand, if you found a start-up, even if your idea, team, product, and plan are good enough to gain VC backing, you have a 75% chance of failing. That being said, you'll never find a local auto-body shop that reaches a Fortune 500 market cap or hires 10,000 employees, but there are hundreds of start-ups quickly pushing into those upper echelons of growth. This is such a critical point that it bears repeating—startups rarely succeed, but when they do, they can succeed brilliantly.

Different Financing Needs. Banks make loans to traditional small businesses. If you want to start a dry cleaners, you can make a good business case to a bank for why their loan to you is a solid investment. The bank can compare your projections to millions of other dry cleaners and plug it all into the time-worn risk/reward ratio for making loans. For a well-run bank, this is like being the house at a casino. You may win some and you may lose some, but at the end of the day, the odds are clear and in your favor, so you will win a lot more than you lose. Venture Capital firms invest in late-stage, proven start-ups. If your start-up has achieved profitability and can show a hockey-stick growth chart, you'll have to hire a team of bouncers to keep away VC firms from all over the planet looking to fund the next stage of growth in exchange for a piece of your company. VC firms are, by and large, structured to make multi-million dollar investments in a small number of late-stage startups that they can shepherd from strong to stratospheric results. If you want to start a start-up company from ground zero, you may fail before you can even agree on a catchy name. Plus, from the point of view of any standard bank your business model is so new there's almost nothing to compare it to, which makes you a completely unacceptable risk. From the perspective of a VC firm, you're also too new to be worth the time of day. So, who fills the gap for early-stage startups?

The A-team: Angels and Accelerators. The angel investor spreads their investment over a large number of early-stage startups and takes a larger percentage of equity in return. The vast majority of their investments fail, just as one might lose many hands of poker. The business model of accelerator programs centers on "hacking" the early stage funding environment by preparing companies for their first investment, usually within threemonths of the end of their program. They invest at market terms, provide access to mentors and training on a broad set of startup-related subjects. In exchange they take 5-10% equity in the company. How do angels and accelerators decide how to invest their resources when a start-up entrepreneur has neither a traditional business plan nor multiple years of strong start-up results to show? Is it that killer idea that grabs their imagination? The "great idea" is perhaps one of the most mythical and misunderstood elements to the entire startup process. It's not that ideas don't matter, it's that SiliconValley has learned that the hard work that differentiates winners from losers comes not in dreaming things up but in getting them done.

Source: (Donier, 2015)

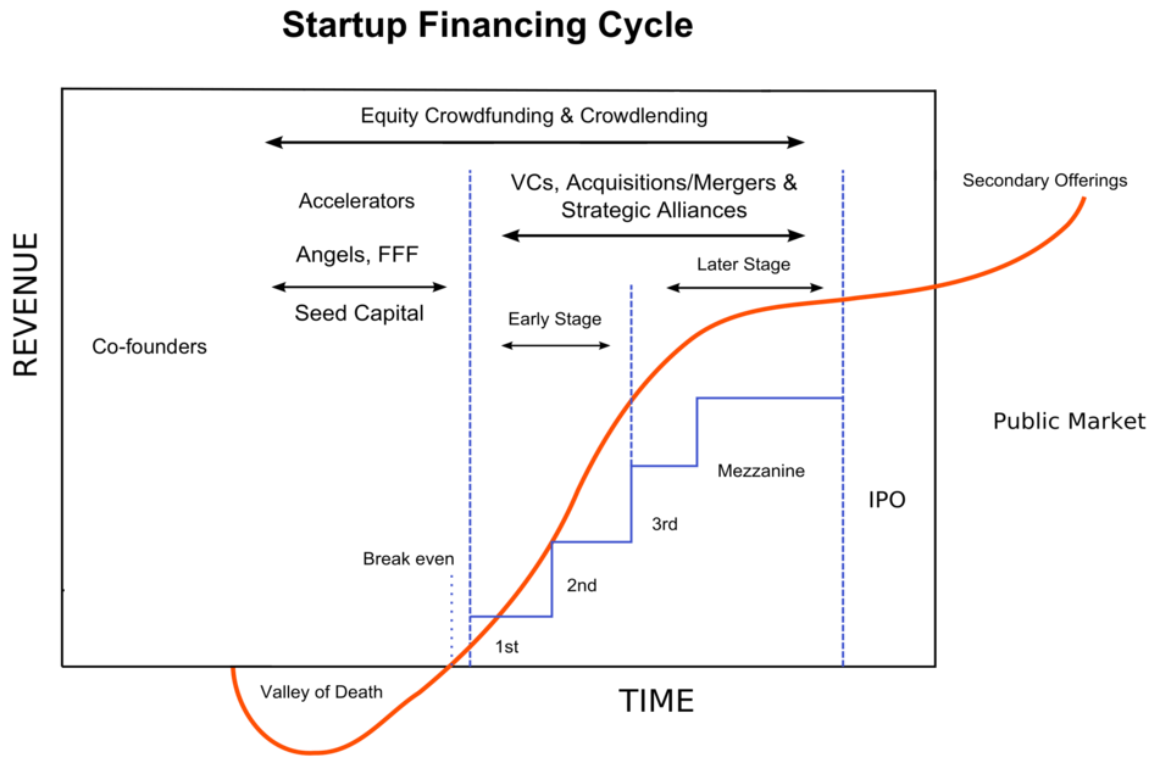


Figure 3: Start-up financing cycle
Source: Wikipedia Commons (By Kmuehmel, VC20, https://commons.wikimedia.org/wiki/File:Startup_financing_cycle.svg)

What Exactly is an Entrepreneurial Ecosystem?

Approaches to defining and measuring entrepreneurial or entrepreneurship ecosystems vary widely, but a synthesis of existing definitions shows a set of domains that are key to most of these ecosystems:

1. **Finance**: Includes access to debt; access to venture capital; access to grants; access to angels; banks; microfinance institutions; public capital markets; development finance institutions; government finance
2. **Business Support**: Includes industry networks; incubators/accelerators; legal/accounting services, business mentors and technical advisers; credit rating agencies
3. **Legal Framework and Government policies**: Includes tax rates; tax incentives; costs to so start a business
4. **Market Reach**: Market Reach is defined by the ability to access early customers in an ecosystem's local and/or culturally similar markets, as well as the ability to reach foreign customers to grow globally
5. **Human Capital and Access to Talents**: Talent consists of several variables measuring the quality, availability, and the cost of technical talent available to startup founders The corresponding actors include high schools; universities; technical training institutes; community colleges.

4. Methodology

The approach adopted by this Report is based on a definition of entrepreneurs and entrepreneurship that takes into consideration the complexity of both said concepts. This complexity stems from the fact that many actors, institutions, phenomena and processes are taking place in what is called the entrepreneurial ecosystem.

In addressing the issue of entrepreneurship in an open system context, such as Arab's region, one must caveat the conditions from which an analytical framework and its associated policy must depart. The margin of maneuver left for policy makers at the national and regional levels, to influence the attractiveness, and efficiency of entrepreneurial ecosystms and incentivize the process of new venture dvelopment through all its stages, is conditioned by powerful external stimuli and also strong internal inhibiting resistance and, hence, subject to a higher than usual uncertainty. There are no purely theoretical, analytical, functional or practical methods by which these conditions can be tackled.

The analysis of such a question is best approached through the interplay of system theory with the actual developments that have been observed in the real course of events, or developments of know-how in industry under extreme risks.

Central to this work are the following questions:

- To what extent can an innovation and technology-driven entrepreneurial ecosystem help the Arab region in overcoming its main challenges, difficulties and pitfalls? More specifically, how can this ecosystem contribute in achieving the SDGs in this region?
- What model is most efficiently applicable in this region and what are the main obstacles preventing Arab countries from growing and sustaining an entrepreneurial ecosystem?

In order to be closer to the real situation, the analysis was not only based on numbers, figures and indicators collected from different international indices, but also involved conducting Focus Group (FG) sessions in each one of the above mentioned countries, gathering representatives from the different actors involved in the individual entrepreneurial ecosystemof those countries. One main center of these FGs was bringing together the different stakeholders of the entrepreneurial ecosystem.

A section of this report also features a comparison between the situation in the Arab world and international experiences in countries such as France, Malaysia, Chile, and Romania.

Finally, a set of recommendations addressed to the different beneficiaries and different categories of actors of the entrepreneurial ecosystem was synthetized.

Description of the Framework of Analysis

The framework of analysis adopted is composed of two dimensions.

The first dimension consists of the ecosystem composed of a set of pillars. Below is a detailed description of these pillars and their breakdown into sub-pillars.

The second dimension of the entrepreneurship stakeholders namely, **the entrepreneur**, the investor, the public authorities, academia. This dimension is captured by the FG sessions organised in 3 Arab countries and fully explained below.

This double dimensional approach, mixing the principal actors' perspective with the ecosystem assessment should lead to a better understanding of the entrepreuneurial economy and hence more accurate and feasible recommendations to overcome gaps and weakneses or reinforcing efficient mechanisms and successful measures.

The Pillars of the Entreprenurial Ecosystem

Table 5: Pillars and sub-pillars of an entrepreneurial ecosystem

Pillar	Description	Sub-Pillar
1. Access to Markets and Ease of Doing Business	The ability to access markets is the end-goal of all entrepreneurs – to break the market, to have solidified a presence. Essentially, the availability of accessible markets is important for the growth of companies in a region. The premise for this pillar is basically the number and category of a company's potential clients/customers. Another premise is the location of these customers – if they are coming from domestic (local) or foreign (regional/international) markets. The combination of both these 2 premises, makes up the components of an accessible markets pillar. An additional component here is the ease of doing business (World Bank's Doing Business 2017), which in itself comprises several sub-components. It measures and tracks changes in regulations affecting 11 areas in the life cycle of a business.	**Domestic Market:** - Large companies as customers - SMEs as customers - Government as customers **Foreign Market:** - Large companies as customers - SMEs as customers - Government as customers **Ease of Doing Business** 1. Starting a business 2. Dealing with construction permits 3. Getting electricity 4. Registering property 5. Getting credit 6. Protecting minority investors 7. Paying taxes 8. Trade across borders 9. Enforcing contracts 10. Resolving insolvency 11. Labor market regulation (data is included an annex-World Bank).
2. Human Capital/Skills	Human Capital can either make or break a company. There is a high emphasis among entrepreneurs in finding the right team – diversity, experience, skills, and competencies - to ensure the continuation and success of their company.	- Management Talent - Technical Talent - Entrepreneurial company experience - Outsourcing availability - Access to immigrant workforce
3. Funding and Finance	Funding and finance is made up of all the financial mechanisms, entities and	- Friends and family

	structures that are put in place to help support entrepreneurs achieve growth. Access to finance is most often cited as one of the major barriers facing entrepreneurs today – especially pre-seed, seed and early-stage financing.	- Angel investors - Private equity - Venture capital - Access to debt
4. Network and Support Systems	An entrepreneurship network is essentially made of up of business support mechanisms and systems that are geared towards promoting entrepreneurship and entrepreneurs. These mechanisms can be at the business-level (business development, coaching, mentoring), skills-level (workshops, training, technical support), or financial-level (awards, competitions).	- Mentors/advisers - Professional services - Incubators/accelerators - Network of entrepreneurial peers
5. Government and Regulatory Framework	Just as any system is governed by laws and regulations, so is an entrepreneurial ecosystem. The government plays an essential role in the promotion of innovation, technology and entrepreneurship in a country. Knowing this, certain government barriers and increased bureaucratic procedures can often hinder the ease of starting a business (ex. registering the company), maintaining it (ex. access to financial and business support), and even closing it (ex. filing for bankruptcy).	- Ease of starting a business - Tax incentives - Business-friendly legislation/policies - Access to basic infrastructure - Access to telecommunications/broadband - Access to transport
6. Universities, Education, and Training	The role that academia plays in entrepreneurship is often a catalyst. Universities and the educational system play an important role in breeding an entrepreneurial spirit and culture in a country's youth, not to mention in building their entrepreneurial skills and competencies through designated entrepreneurship education and training. Moreover, through their programs, universities can promote innovation and entrepreneurship through academia-industry collaboration (matching students to the job market).	- Available workforce with pre-university education - Available workforce with university education - Entrepreneur-specific training
7. Physical Infrastructure	The physical environment surrounding entrepreneurs is just as important to their success as the conceptual one. Very much tied to the pillar on Government and Regulatory Framework, accessing basic infrastructure (electricity, telecommunication, hardware, co-working spaces, etc.) is one of the important elements that are conducive to a healthy entrepreneurial ecosystem.	- Access to basic infrastructure: electricity, water - Access to transportation: roads, public transportation - Access to telecommunications: internet, landlines, etc. - Access to co-working spaces - Access to prototyping labs, fabrication labs - Access to hardware (equipment, tools, machinery)

Focus Group Approach

Purpose

As part of the research and analysis of this Report, Focus Groups (FGs) were conducted in the 3 designated Arab countries: Lebanon, Morocco, and Oman, to bring government decision makers, entrepreneurs and venture capitalists together to discuss a number of topics related to entrepreneurship and innovation. Moreover, the FGs served to supplement the metric data (figures and numbers from international indices) gathered on innovation, technology and entrepreneurship in the Arab region.

Objectives

1. To have a better understanding of the legal and regulatory environment of entrepreneurship in each country;
2. To gain greater insight into the real-life situation of the entrepreneurial ecosystem as a whole in each country;
3. To better understand the conditions of the entrepreneurial ecosystem as pertaining to entrepreneurs and the mechanisms put in place to support them – particularly venture capitalists;
4. To use the results as a base for recommendations to be made about how to enhance the entrepreneurial ecosystem vis-à-vis all involved actors and stakeholders and how to promote innovation and technology among this entrepreneurial ecosystem to foster the achievement of the SDGs;
5. To provide new regional perspectives on the many challenges commonly faced by Arab countries in the region.

Focus Group Participants

The FGs were conducted in 3 Arab countries: Lebanon, Morocco and Oman. Participants were carefully selected by invitation only, chosen according to the different actors and players that are key in the entrepreneurial ecosystem of each country. In order to ensure proper representation, they were chosen from different levels of the entrepreneurial ecosystem.

Thus, the FGs involved the following participants from:

- **Government**– this includes representatives from the equivalent Ministry of Economy and Trade and/or Ministry of Industry of each country;
- **Financial and Banking Sector**– this includes venture capitals, loans and other financial schemes;
- **Academia**– this involves reaching out to professors and academics in both first tier and second tier universities who are designing curricula for courses on Entrepreneurship at their university. It is important here to cover what universities, as institutions, are offering entrepreneurs;
- **Legal**– this includes lawyers and/or law-makers who specialize in Intellectual Property Rights and Patent laws, for example;
- **Accelerators and Incubators** – these include representatives of the business support system that is available to entrepreneurs;
- **Entrepreneurs**– these include entrepreneurs from the different stages of the entrepreneurship chain (pre-seed, early-stage, acceleration, MVP-stage, growth, etc.) so as to gain more comprehensive insight into and coverage of the situation of start-ups in each country.

Setting

The FGs were designed to be conducted in 3 hours. The FGs were semi-structured and allowed for a platform of interaction and spontaneous feedback among the participants in addition to capitalizing on the local narratives and nomenclature used to describe the entrepreneurial ecosystem of each country. The FG Moderator ensured a comfortable and open environment for discussion and question/answer interactions.

The first FG was conducted in Lebanon on October 3rd, 2017 at the ESCWA HQ in Beirut. Based on the lessons learned from the FG sessions in Lebanon, the corresponding FG session in Morocco (November 13th, 2017) and Oman (December 12th, 2017) were designed accordingly.

Topics

Topic 1: Start-up Creation: Internal Dynamics of Entrepreneurship
- Issues related to leadership, administration, incentives

Topic 2: Legal Framework
- Issues related to bankruptcy laws, intellectual property, and legal structure of startups

Topic 3: Collecting Funds
- Issues related to access to funding, its challenges and available opportunities – mainly concerning Venture Capitals (business plans, pitching, etc.)

Topic 4: Bringing the Product to Life
- Issues related to prototyping, access to facilities (prototyping labs, fast prototyping labs, fabrications labs, equipment)
- Issues related to human capital involved – are the human resources available in the country or is it outsourced?

Topic 5: Escaping the 'Death Valley' – Breaking the Market
- Issues related to the second half of the innovation value chain – commercialization, growth, access to market, product sales

5. Situation Analysis in the World and the Arab Region

Let us start by a brief situation analysis looking at both the global trends and factors affecting the emergence of the new entrepreneurship landscape in the world and the specific factors affecting the status of entrepreneurs and the economic transformation in the Arab region.

Practice and research have shown the implications of innovation and technology on improving human welfare, economic growth, industrial efficiency, and environmental protection. Innovation and technology have become key to finding solutions to the most pressing and persistent social, economic and environmental needs and challenges communities face today.

The 2030 Agenda for Sustainable Development came with a set of Sustainable Development Goals (SDGs) that affirm the importance of technology and innovation. For achieving the SDGs, the 2030 Agenda acknowledges the importance of involving various stakeholders and the responsibility of all actors in contributing to fulfilling them. It calls upon governments and the private sector, including entrepreneurs and start-ups, to actively engage in this global movement.

The Global Entrepreneurial Economy

In 1979, David Birch published "The Job Generation Process" in which he showed that the best solution to stimulate the economy and overcome the issue of unemployment is to foster entrepreneurship and innovation. Since then many governments in the world, especially in the US and Europe, have considered entrepreneurship as a major component of their economic policy to restore growth and sustain job generation.

The tremendous success of technopreneurs such as Andrew Grove of Intel, Bill Gates of Microsoft, Steve Jobs of Apple, Mark Zuckerberg of Facebook confirmed and boosted this orientation. Their entrepreneurial activities and the disruptive entrepreneurial movement they led have completely changed the economic scene, the ranking of the top 500 corporations and the distribution of wealth.

Silicon Valley remains, since its begetting, the iconic model many countries and regions in the world are trying to replicate or at least imitate. Today, many similar ecosystems are scattered across the world where innovative enterprises are flourishing boosted by science and technology parks located in or nearby innovational universities, supported by visionary governments and financed by opportunistic venture capitalists.

Figure 4 below shows the evolution of the global venture capital market since 2010. We can see a sharp and steady increase between 2010 and 2014.

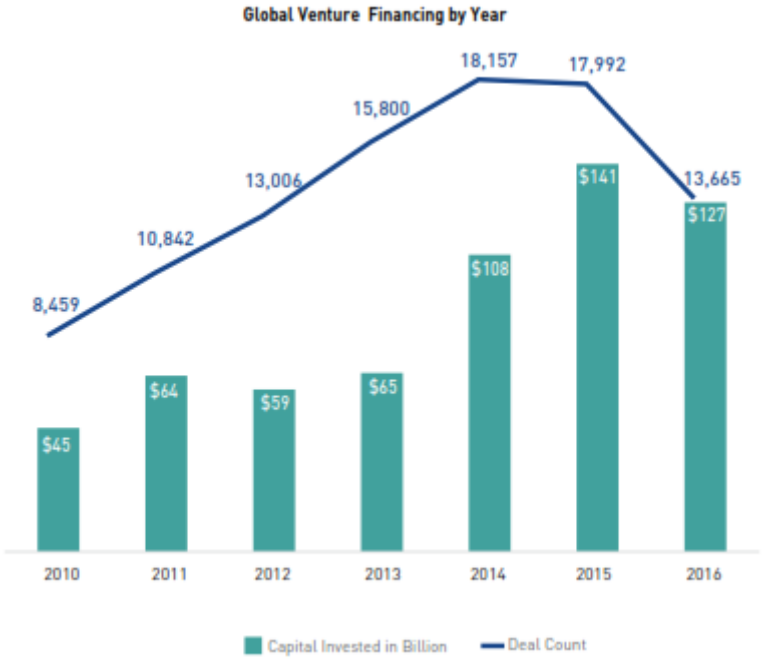


Figure 4: Global venture financing per year (ArabNet Business Intelligence, 2017)

The United Nations (UN) has also recognized the importance of entrepreneurship and has adopted three resolutions on supporting entrepreneurship for development[9]. The most recent resolution adopted in 2017[10], acknowledges that "entrepreneurship drives economic growth by creating jobs, promoting decent work and sustainable agriculture and fostering innovation" and highlights "the importance of promoting development oriented policies that support productive activities, job creation and entrepreneurship, including social entrepreneurship, creativity, and innovation". The ministerial declaration passed during the High-Level Political Forum on Sustainable Development that took place in July 2017, also acknowledges the importance of supporting entrepreneurship,

[9] Resolutions 67/202 of 21 December 2012, 69/210 of 19 December 2014, and 71/221 of 7 February 2017.
[10] General Assembly resolution 71/221, Entrepreneurship for sustainable development, A/RES/71/221 (7 February 2017), available from undocs.org/A/RES/71/221

creativity, and innovation, and the potential these have for spurring economic growth and increasing job opportunities particularly for women and youth[11].

Similarly, on 20 June 2014, the final communique of the 2014 G20 Leaders' Summit stressed upon the fact that enhanced economic prosperity could be achieved by the "promotion of competition, entrepreneurship, and innovation". They also called for implementing strategies to reduce unemployment, and generate new jobs particularly for the newcomers among the youth, based upon promoting entrepreneurship at all levels especially in the universities.

Challenges of the Arab Region

There are serious problems and challenges facing the Arab world today. The most pressing and critical issues are among the following:

1. Global climate change and its impact on the MENA regions, such as decreasing rainfall and desertification
2. Population growth and its negative impact on economic development. The population is expected to double, from 345 million people to over 600 million, over the next 25 to 30 years
3. Insufficient food production in all Arab States: all rely on food import to meet their basic needs
4. Shortage of fresh water which caused the Middle East to be among the driest regions in the world. More than 2/3 of Arab countries are classified as water poverty stricken
5. The official unemployment rate in the Arab world is 15%, which is a very conservative estimate. Some studies note that at least 100 million new jobs need to be created in the next 25 years to cater to the young generation that will be entering the labor market
6. Poverty and the high rate of illiteracy, which are of major human and economic concerns. More than 40% of the Arab world population are living below the poverty index level, which is 2 dollars per day, per person. Poverty is definitely associated with the high rate of illiteracy. It has been estimated that at least 1/3 of the adult population in the Arab world cannot read or write. This translates to more than 60 million people.

In addition, since the 2011 Arab Spring, political and economic crises have overwhelmed large segments of the MENA region with disastrous humanitarian and economic consequences. According to Fardoust (2016), the region has witnessed huge economic and social losses from poor economic management and conflicts requiring massive military outlays. There is an urgent need for the region to deploy its substantial human, natural, and financial assets more efficiently through adopting economic and social policies that lead to more rapid and inclusive economic growth.

SDGs Guidance

Most of the studies tackling the entrepreneurship topic tend to minimise the crucial importance of the contextual factors. Some aspects directly related to the impact on sustainable, harmonious and well-balanced development are neglected. Entrepreneurship issues in the Arab region are addressed independently from the above mentioned critical challenges the Arab region is struggling with.

A disconnected analysis from its context will provide false impressions, deceiving numbers and rankings, and hence inadequate policies and inefficient recommendations. The SDGs as shown in the box below (Box 1) are aligned with most the critical issues identified in the Arab world. Therefore, we are embedding SDGs in the framework of analysis and in the formulation of the recommendations.

[11] ECOSOC. Ministerial declaration of the 2017 high-level political forum on sustainable development, E/HLPF/2017/L.2 (14 July 2017), available from http://www.un.org/ga/search/view_doc.asp?symbol=E/2017/L.29&Lang=E

Box 1: The UN Sustainable Development Goals

Sustainable Development Goals

Goal 1. End poverty in all its forms everywhere

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Achieve gender equality and empower all women and girls

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10. Reduce inequality within and among countries

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. Take urgent action to combat climate change and its impacts*

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

6. Assessing the Arab Entrepreneurial Ecosystem

Overview

The Global Entrepreneurship Index (GEI), developed by the Global Entrepreneurship and Development Institute, is one of several endeavours to calculate one composite index that measures entrepreneurship.

The **GEI** report indicates that the most entrepreneurial countries do not necessarily have the largest numbers of entrepreneurs. To measure high-growth entrepreneurship, quality matters more than quantity and the degree to which a country is entrepreneurial depends on what the best entrepreneurs within the context of the country's entrepreneurial ecosystem.

The GEI score relies on 14 pillars aggregated into three sub-indices:
(1) Entrepreneurial Attitudes sub-index (ATT): opportunity perception, start-up skills, risk acceptance, networking, and cultural support;
(2) Entrepreneurial Abilities sub-index (ABT): opportunity start-up, technology absorption, human capital, competition;
(3) Entrepreneurial Aspirations sub-index (ASP): product innovation, process innovation, high growth, internationalization, risk capital.

According to the report, the GEI is not a simple count of new firms, nor is it an exercise in policy benchmarking. Moreover, the GEI does not focus solely on high-growth entrepreneurship but also consider other important characteristics of entrepreneurship such as innovation, market expansion, growth-orientation, and aspirations for internationalization. When it comes to the Arab world, Table 6 shows the GEI index and sub-indexes as well as rankings of 13 Arab countries. Tunisia is the top mover improving 20 ranks between 2016 and 2017[12].

Table 6: The GEI in the Arab region

Country	Sub-indices			GEI	Rank 2017	Rank 2016	Rank Change
	Entrepreneurial Attitudes	Entrepreneurial Abilities	Entrepreneurial Aspirations				
United Arab Emirates	49.9	59.4	67.0	58.8	19	19	----
Qatar	55.9	55.6	62.3	58.0	21	24	3▲
Saudi Arabia	56.3	40.6	44.6	47.2	30	36	6▲
Bahrain	45.5	45.0	43.6	44.7	34	29	-5▼
Oman	45.4	40.3	45.2	43.6	37	38	1▲
Kuwait	44.9	37.6	44.9	42.5	39	39	----
Tunisia	32.7	45.2	43.7	40.5	42	62	20▲
Jordan	39.5	25.1	30.5	31.7	56	64	8▲
Lebanon	25.8	27.9	32.8	28.8	63	50	-13▼
Morocco	23.9	20.0	33.1	25.7	70	78	8▲
Algeria	33.2	21.3	19.7	24.7	73	75	2▲
Egypt	16.0	19.9	32.3	22.7	81	89	8▲
Libya	11.9	26.5	19.3	19.2	104	79	-25▼

Source: ESCWA compilation based on data from Global Entrepreneurship and Development Institute. 2017. Global Entrepreneurship Index.
Note: the 2017 report covers 137 countries.

[12] ESCWA Compilation

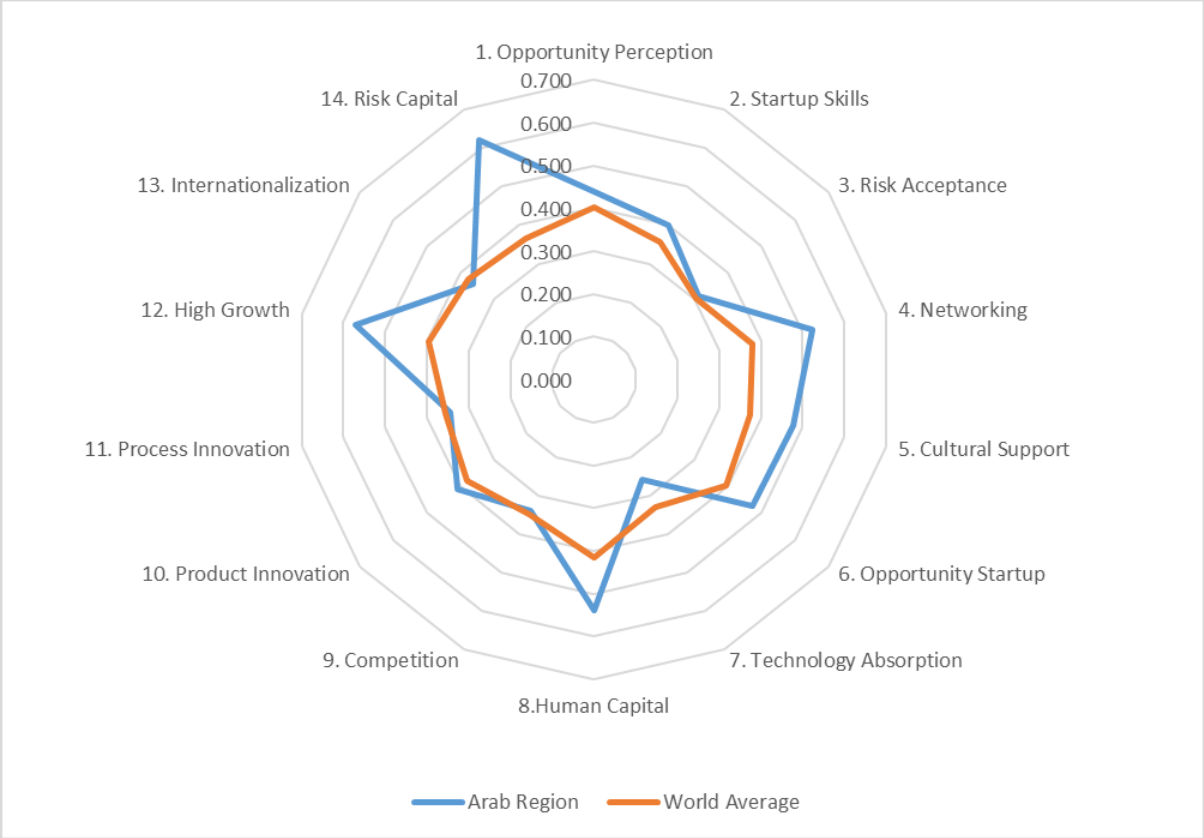


Figure 5: GEI results comparing the Arab region to the World average

These indicators call for the following observations:

- The Arab region, compared to the world average, is in a good position where all its indicators are similar or above the world average except for Technology Absorption (0.28 for the Arab Region and 0.32 for the world average). While all over the world especially in the emerging economies, governments are striving to acquire and absorb new technologies to maintain their global economic competitiveness and preserve their independence, the Arab countries do not seem to focus on this issue or one can explain this by the fact that their policies are not succeeding in bridging this critical gap.
- Despite these honourable results, the Arab countries are still struggling with vital issues such poverty, youth unemployment, analphbatism.
- In the Global Entrepreneurship Index (GEI) 2018 rankings, Qatar in ranked 22nd/137 countrues after UAE (26th), however, the total number of disclosed deals in start-ups between the year 2013 and 2016 was extremely low compared to that of UAE, as shown in the figure below (Figure 5) (ArabNet Business Intelligence, 2017).
  This observation should remind us that we have to handle with extreme care these numbers and maintain our attention focused on the real economy and not on its quantitative represention.
- Top movers between 2016 and 2017 are Tunisia improving 20 ranks while Lebanon is regressing 13 ranks. It is important to undertand the reasons of these changes, if they are persistent or accidental due to indegenuous or exogenuous factors.

	Number of Deals			
	2013	2014	2015	2016
UAE	33	57	66	78
Lebanon	11	21	31	37
KSA	19	24	21	30
Egypt	30	32	13	26
Jordan	25	39	33	21
Palestine	5	13	14	7
Tunisia	2	11	9	7
Bahrain	6	3	4	6
Morocco	5	4	6	5
Syria	1	1	0	1
Algeria	2	2	1	0
Kuwait	0	1	3	0
Oman	1	0	0	0
Qatar	1	0	0	0

Figure 6: Markets ranked by number of investments (ArabNet Business Intelligence, 2017)

Access to Markets and Ease of Doing Business

The MENA region is home to over 350 million citizens, with more than half of these citizens under the age of 25, making it "one of the most youthful and promising consumer markets in the world". However, according to Fadi Ghandour from Wamda (Ghandour, 2016), the problem lies in the fact that "each country in this 'market' has its own, varying, set of systems, laws and regulations", which impose some limitations to the promotion of entrepreneurship.

One way to address this issue is in the facilitation of free movement of goods, people (human capital) and companies, which would provide a significant boost to start-ups and businesses. The potential benefits of such trade liberation on the MENA region's various economies include "better productivity, increased intra-regional trade, a surge of economic activity and increased efficiencies from competition" (Ghandour, 2016).

Moreover, concerning the ease of doing business (World Bank's Doing Business 2017 MENA Regional Profile), the MENA region on average scored 56.36% as compared to the rest of the world. Below is a graph that shows how the individual MENA countries fared compared to the regional average.

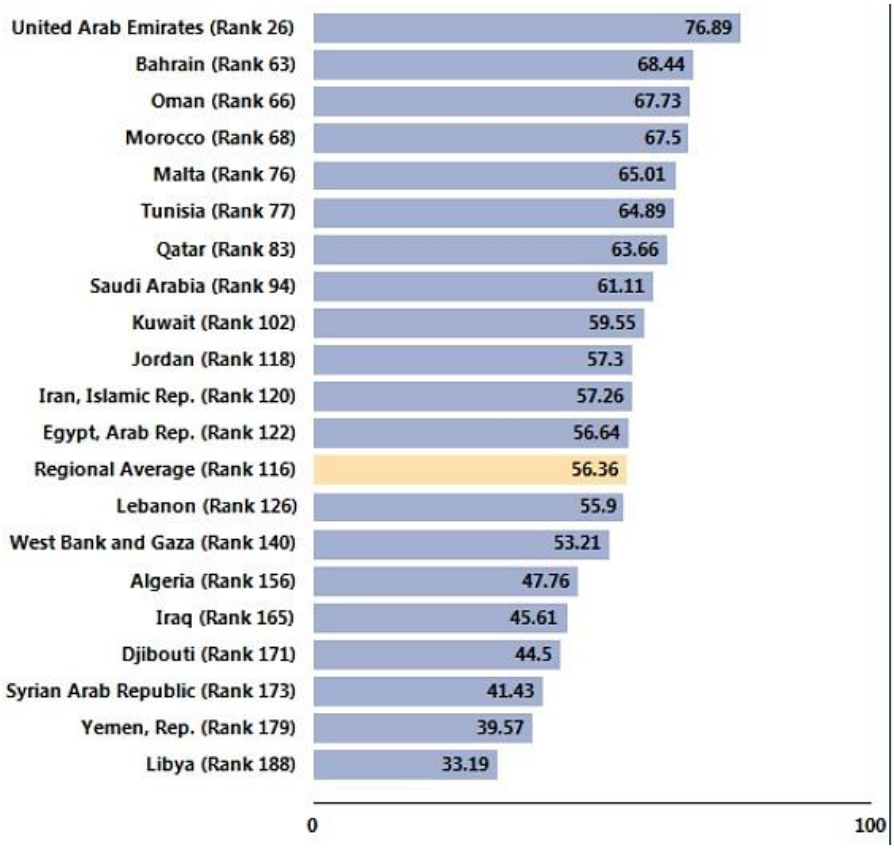


Figure 7: How MENA economies rank on the Ease of Doing Business (World Bank, 2017d)

(Scale: Rank 190 center, Rank 1 outer edge)
Regional average ranking

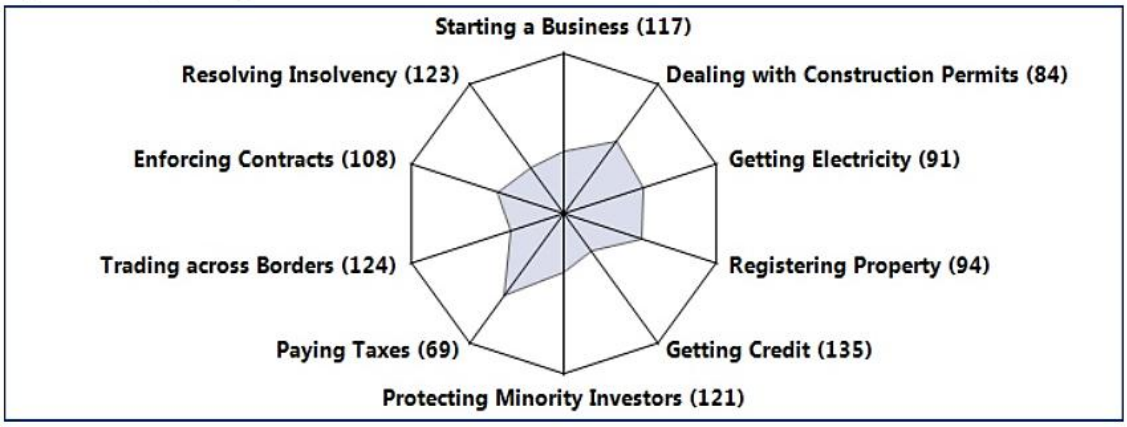


Figure 8: MENA regional average rankings in Ease of Doing Business. A total of 190 countries were ranked (World Bank, 2017d)

As can be seen from Figure 8, the lowest score for the MENA region is in getting credit (135/190). Access to finance is a major issue faced by entrepreneurs – discussed in the section below.

"Well-functioning markets contribute to the innovation environment through competitive pressure, efficiency gains, and economies of transaction and by allowing supply to meet demand. Markets that are open to foreign trade and investment have the additional effect of exposing domestic firms to best practices around the globe, which is critical to innovation through knowledge absorption and diffusion".

The market sophistication sub index of the Global Innovation Index (GII) reflects these factors and is presented in the following table for Arab countries between the years 2013 and 2017. Only the United Arab Emirates has seen a steady increase in its market sophistication over the last five years. Lebanon is showing on the contrary a steady decrease in the sophistication in its market during the same period of time.

Table 7: Market Sophistication in the Arab Region 2013 – 2017

Country	Global Rank 2017	Year 2013	2014	2015	2016	2017	Data Trend
United Arab Emirates	33	47.3	46.2	48.1	48.7	52.9	
Saudi Arabia	51	53.5	59	50.3	49.6	49.4	
Kuwait	58	45.4	47	43.7	46	47.8	
Oman	72	44.1	48.1	40.7	39	44.2	
Bahrain	84	47.6	48.5	46.8	38.7	42.7	
Qatar	85	47.4	46.3	45.9	42.8	42.6	
Morocco	89	41.5	42.8	45.1	38	42.1	
Lebanon	96	48.1	44.6	42.4	37.9	39.4	
Tunisia	98	38.3	39.9	35	29	38.7	
Egypt	107	35.8	35.4	35.9	34.2	36.7	
Jordan	116	46.5	39.9	38.8	32	32.3	
Yemen	117	34.3	40.7	35.3	33.8	32.1	
Algeria	122	38.4	36.2	36.8	31.7	29.5	

Source: Global Innovation Index Reports 2013-2017.

Human Capital/Skills

According to the the World Economic Forum's Human Capital Index the Arab Region captures less than 60% of its full human capital potential (compared to a global average of 65%). Three common themes characterize Arab labour markets:

- Low but increasing levels of workforce participation by women
- High rates of unemployment and under-employment, especially among the young and relatively well-educated; , youth unemployment in the mena region stands at 31% and university graduates are making up nearly 30% of the total unemployed pool
- Large but decreasing shares of public sector employment

Whatever is the evolution of the job market in the Arab region, it is going through a major change to the skills profile. Preparing for these disruptions and increasing the readiness to grasp new opportunities, will require broad reforms and strong public-private collaboration (World Economic Forum, 2017a).

The MENA region boasts some of the world's top higher education institutions and generates a massive pool of talented and competent graduates in the fields of science, technology, and engineering. In a recent report by HSBC Private Bank, the MENA region is "home to the highest proportion of millennial entrepreneurs in the world – 63% of the business owners they screened in the Middle East were aged 35 or under" (Samir, 2017).

Additionally, 46% of these MENA entrepreneurs started their businesses at school or university, the highest proportion of any country or region in the world, emphasizing the important role that academia plays in shaping an entrepreneur and breeding an entrepreneurial culture among youth.

The Global Human Capital Index 2017 provides a holistic assessment of a country's human capital and its ability to develop human capital (World Economic Forum, 2017). This is supported by the following figure showing the total spending of different Arab countries as compared to other countries in the world on tertiary education.

Algeria is one of the top countries spending on Tertiary education (**Figure 9**). The numbers related to Lebanon do not reflect the total amounts spent in Lebanon on Tertiary education because at least half on the tertiary education is supplied by the private setor being in Lebanon or outside Lebanon.

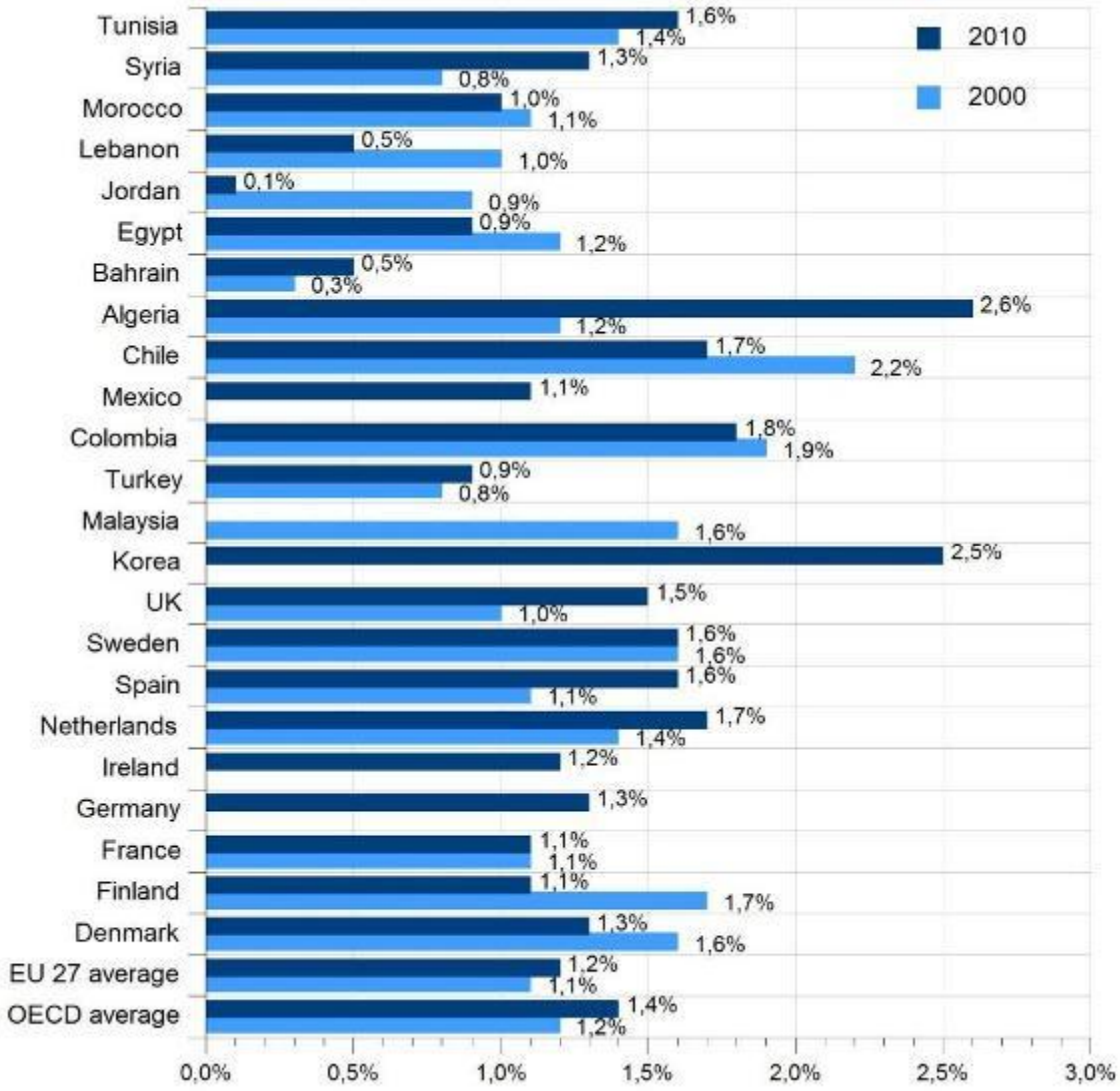


Figure 9: Total spending on tertiary education as a percentage of GDP

In the Arab world, 27% of youth aged 15-24 years old is unemployed, according to the World Economic Forum on the Middle East and North Africa (Aqrabawi, 2017). Regardless of the number of young entrepreneurs emerging in the Arab region, too often, certain influential socio-cultural factors related to family or societal pressures still result in Arab youth playing it "safe" when it comes to choosing their academic path and end up pursuing careers that are more "traditional" or "secure". The result of which are thousands of young, talented Arab men and women who instead of becoming change-makers in their region, are struggling with unemployment due to a saturated job market. Empowering youth drives change and the best way to drive change is through Entrepreneurship – more importantly – through Youth Entrepreneurship, and this needs to start with education. According to the World Economic Forum MENA (2017), "offering young people practical resources and experiences enables them to develop skills and knowledge needed to create entrepreneurial

opportunities". But is it enough to create enough jobs and inverse the increasing curve of youth unmployment?

Access and Availability of Talent, Skills and Technology Empowered Human Resources

According to a study published in 2017 by ArabNet, the skills gap is a real and growing crisis threatening the sustainable growth of the new knowledge economy and reducing the chances of Arab startups to compete globally and reach maturity. This statement is confirmed by many other studies on the same issue. There is also a consensus among experts in this area that closing the skills gap requires a holistic approach involving all stakeholders, including corporations, SME and employers as well as educational institutions and public administrations.

This section will report about the inadequacy between the demand of the nascent entreprenurial economy for skillful workforce on one side and the offer provided by the educational system on the other side. The paradox of a growing unsatisfied demand among the new promising economy and yet a non declining high rate of unemployment especially among youth will be analysed.

This analysis will be based on the assessment of different pillars of the framework including 1) the human capital, 2) the network and support systems, and 3) the educational and training system. Undestanding the interactions between these aspects are more insightful than assessing each pillar separatly.

The Role of Education in Fostering Entrepreneurship

Empowering youth drives change and the best way to drive change is through Entrepreneurship – more importantly – through Youth Entrepreneurship, and this needs to start with education. According to the World Economic Forum MENA (2017), "offering young people practical resources and experiences enables them to develop skills and knowledge needed to create entrepreneurial opportunities".

Entrepreneurial education can overcome many of the **key barriers to youth employment in the area** – such as 1) mismatch of skills, 2) competition from more qualified expatriates, 3) unwillingness to work in the private sector, 4) youth university major preferences, 5) limited employment opportunities for women, and overall 6) job security issues – by:

1. Helping bridge the gap between the public sector and the private sector by introducing entrepreneurial techniques and curriculums in educational institutions. This helps young Arabs better understand what employers are looking for and thus increases their chances of being absorbed by the market.
2. Better preparing Arab youth to be more proactive in honing their skills to match their desired career prospects
    a. Helping to foster cognitive skills such as critical thinking, problem-solving, risk management, business planning and management, as well as personal finance and budgeting
    b. Aiding in building Arab youths' interpersonal skills by promoting teamwork, collaboration, communication and leadership
3. Building a "hands-on" mentality among Arab youth, early on at school, by familiarizing them with the entrepreneurial spirit

(Aqrabawi, 2017)

The field of Entrepreneurship Education and Training (EET) has been gaining much attention on behalf of policy makers and students alike, on an international, regional and national level. Essentially, "EET represents both academic education and formal training interventions that share the broad objective of providing individuals with the entrepreneurial mindsets and skills to support participation and performance in a range of entrepreneurial activities. EET encompasses a heterogeneous array of interventions, including formal academic education programs as well as stand-alone training

programs" (Valerio, Parton, & Robb, 2014).With this, a distinction should be made between Entrepreneurship Education (EE) and Entrepreneurial Training (ET) even though both terms are related, according to the World Bank (2014).

The gap still persists between academia and the private sector with a few recent initiatives trying to remedy this such as the partnership between the Faculty of Engineering and Architecture at the American University of Beirut (AUB) and Beirut Digital District aiming at exposing students to actual entrepreneurial start-ups and mentors with practical business experience. L'École Superieure des Affaires (ESA Business School) in Beirut also launched in 2017 a Master in Entrepreneurship in collaboration with HEC Paris and the Chamber of Commerce, Industry and Agriculture.

Lebanon is home to a variety of initiatives, programmes and companies that offer training and skill-building to different age groups. Other initiatives have focused on integrating the study of entrepreneurship at the university level. In 2011, a partnership was established on a project between the Minister of Higher Education in Egypt and the Middle East Council for Small Business and Entrepreneurship (MCSBE) to develop entrepreneurship curricula for higher education.

The project focuses on developing and integrating courses on entrepreneurship, business management, critical thinking, and innovation. The project was planned for implementation in three phases between 2011 and 2015 starting with three pilot universities and extending to all 19 public universities. It is not clear if this project has actually seen results as there is no available evaluation or assessment. Another project by MCSBE is to establish in Egypt by 2020 a university dedicated to entrepreneurship.

The United Arab Emirates is one of the leading Arab countries in terms of entrepreneurship Dubai Entrepreneurship Academy which provides training programs on entrepreneurial skills and tactics and the University of Wollongong in Dubai which provides a degree of Master of Business in Innovation and Entrepreneurship are examples of academic institutions in this domain. Additionally, according to the Knowledge and Human Development Authorities, 74% of Dubai's private schools teach entrepreneurship in extracurricular activities.

For universities, a national program was launched by his highness Sheikh Mohammad Bin Rashid Al Maktoum to integrate innovation and entrepreneurship into the educational program. This program was introduced to universities in January 2016, and it is in collaboration with Stanford University.

Interest in entrepreneurship education is also present among a few universities in the Sudan (Gangi, 2015). Four universities offer relevant courses and lead to graduate degrees in business administration with one university that offers entrepreneurship as a minor degree. Some of the challenges facing entrepreneurship education in the Sudan include lack of specialized academic staff, lack of awareness among decision-makers of the importance of entrepreneurship education, and limitations in resources.

At the regional level, Injaz Al-Arab is a non-profit organization that has been operating in 13 Arab countries to deliver training on entrepreneurship. Between 2004 and 2014, over 2 million students passing through the training it offers (INJAZ Al-Arab, 2014).

Funding and Access to Capital Markets

Access to different types of funding such as grants, angels, venture capital, loans, microfinance, and government finance is one of the most important pillars of entrepreneurial ecosystems.

Availability of appropriate finance to entrepreneurs and start-ups remains a major indicator in assessing entrepreneurial ecosystems. Most global monitoring systems for entrepreneurship include access to funding in their measures. It is generally broken down into the following indicators:

Concretely, we have to answer the following key question of whether entrepreneurs and start-ups have access to the right amount of funding at the right time under the most appropriate conditions. This section will analyze the availability of funding at each stage of a startup's development in the Arab countries.

Our Analysis is based on data collected from different reports and studies including: GEM, Wamda, ArabNet, and the Global Start-up Ecosystem report.

We have compiled the information related to the following three main aspects of the entrepreneurial funding landscape, the investors, the investments (deals), the exits and each one decomposed into different dimension including the total number, the category, the geographic distribution and the evolution during the time period 2013- 2017. It is worth noticing the following:

- There is a lack of consistency across the different reports. But they remain within a reasonable margin of uncertainty. Basically the differencesare stemming from various definitions of the concept of startup and the confusion with an SME.
- Many deals are not disclosed. Some acquirers are kept in the shadow for other deals the amounts are not disclosed. This lack of information may lead to a distorted image and inaccurate analysis of the Arab entrepreneurial ecosystem. In addition, it may reduce the real size and hence the attractiveness of the Arab entrepreneurial ecosystem.

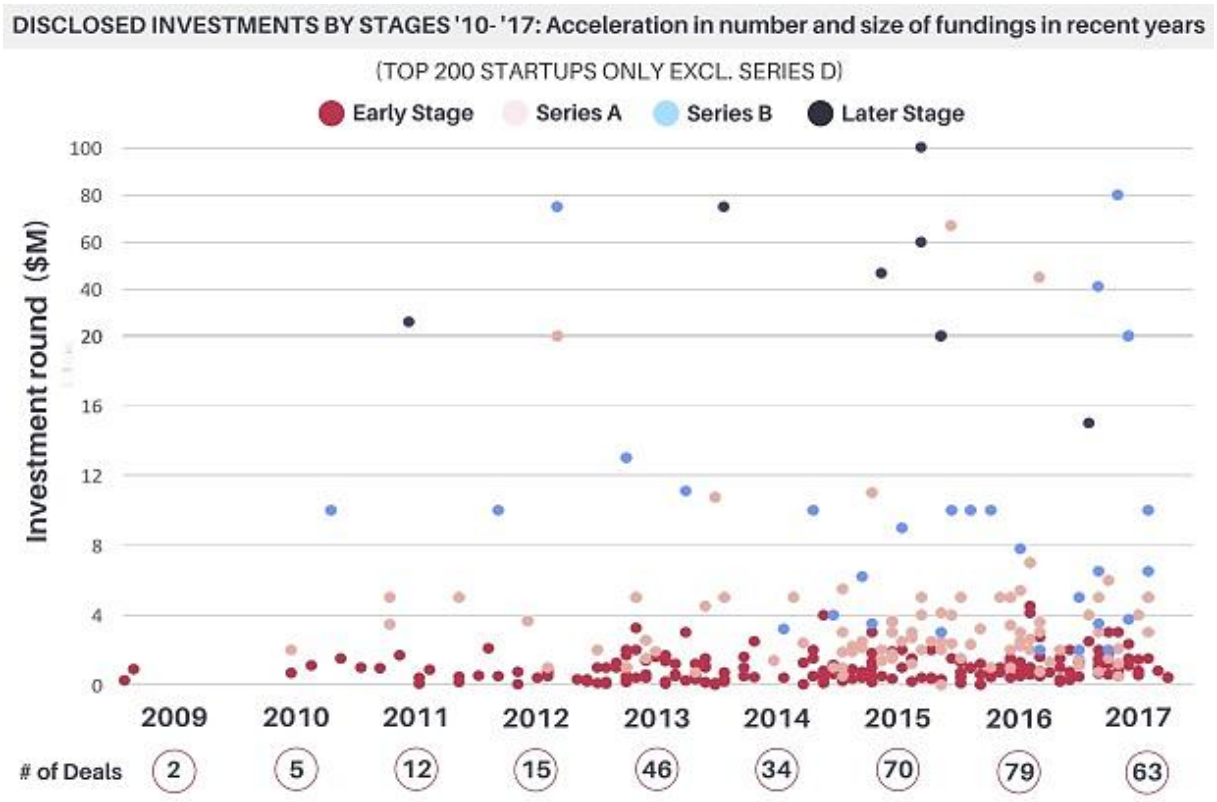


Figure 10: MENA's Top 200 Start-ups distribution according to investment rounds ($) (Source: MAGNiTT, 2017)

Figure 10 shows clearly that most investments are allocated to the early stages which gives an indication that the Arab Ecosystem is still an emerging one far away from maturity. This observation should guide us in analysing properly the situation while comparing it to other mature ecosystems in the world. It should prevent analysts and decision makers from imitating other ecosystems not corresponding to the same level of maturity.

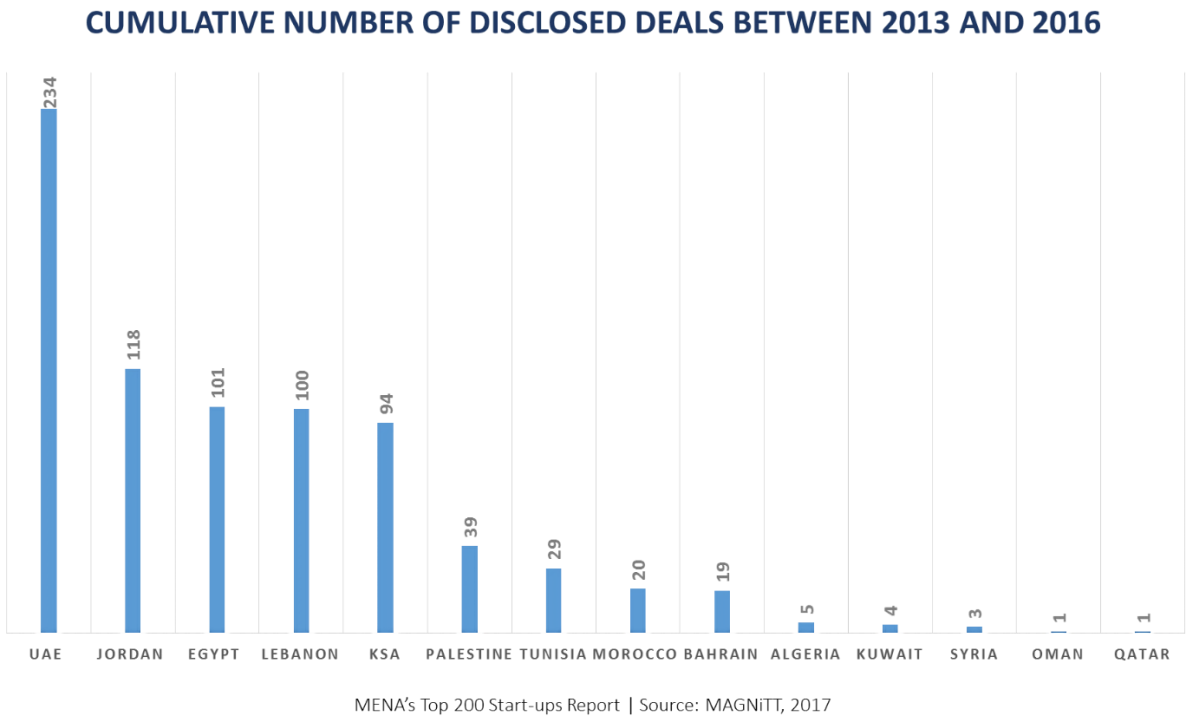


Figure 11: Cumulative number of disclosed deals between 2013 and 2016

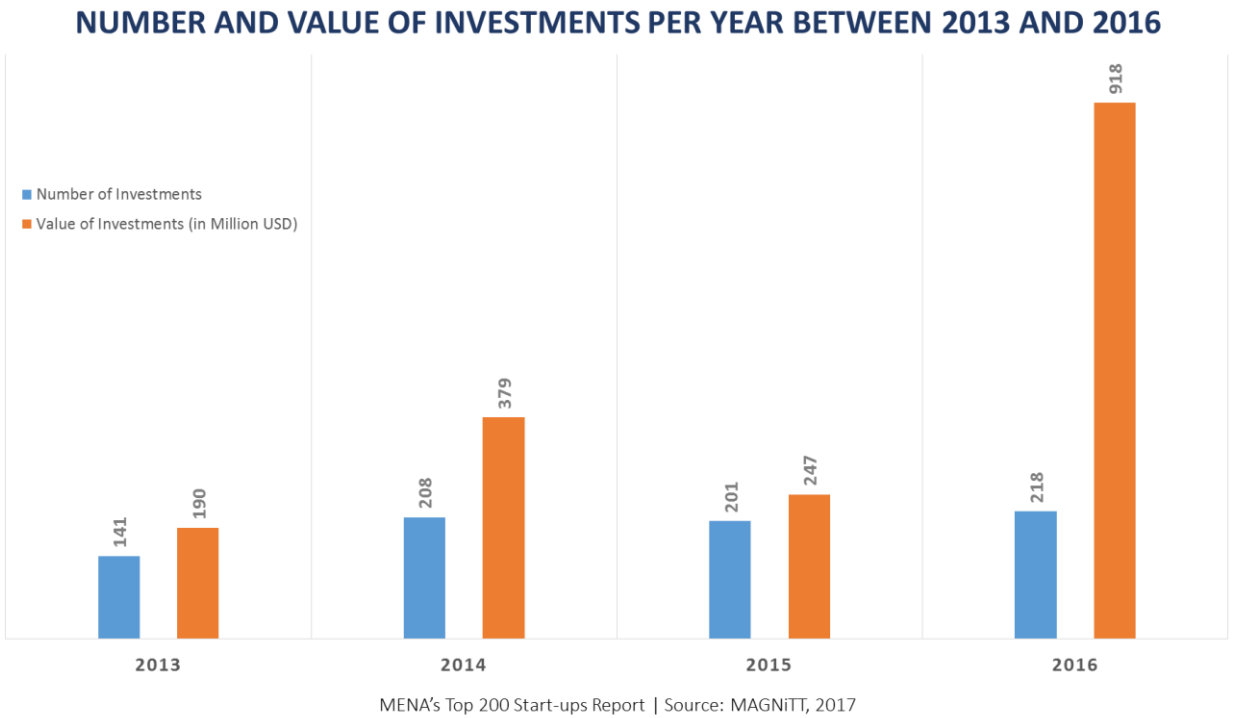


Figure 12: Number and value of investments per year between 2013 and 2016

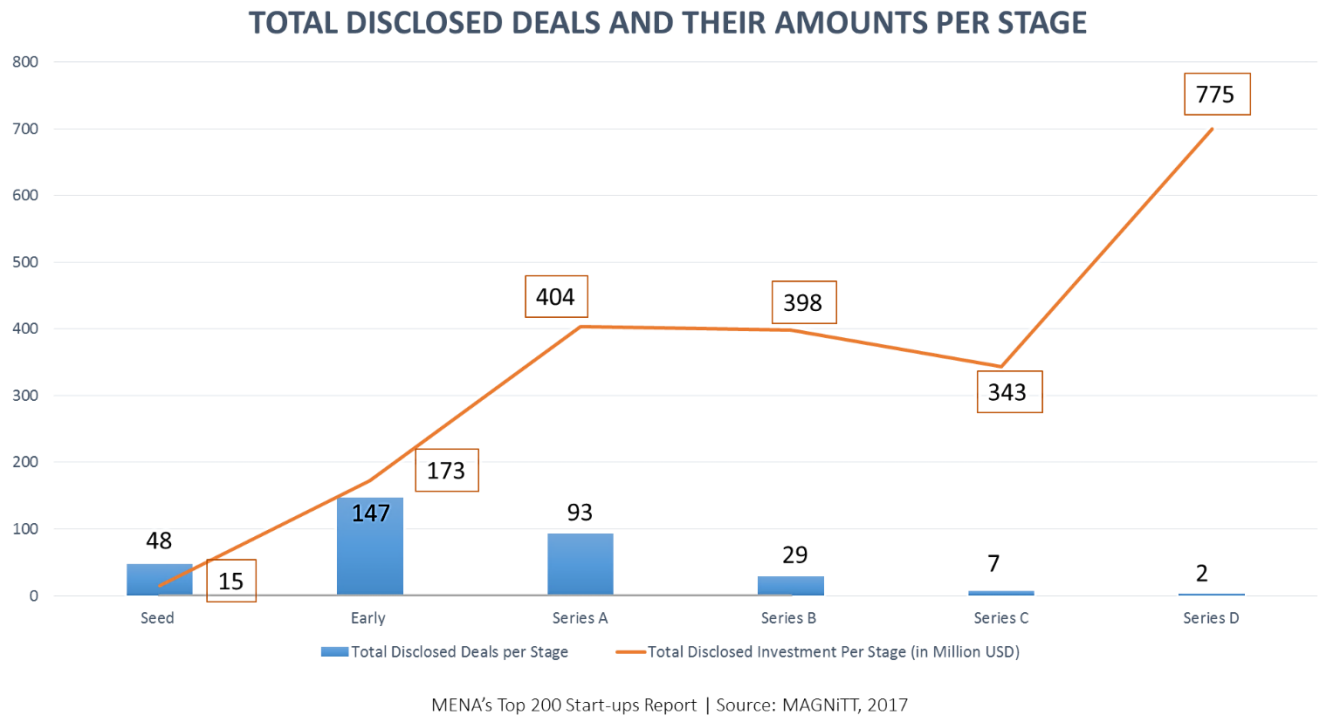


Figure 13: Total disclosed deals and their amounts per stage

Based on a report releasd by INJAZ Al-Arab in 2015, one of the challenges hindering entrepreneurship in the MENA region is the lack of a key determinant: financing opportunities for entrepreneurs. This remains true despite an upsurge in financing options over the past few years, information about which remains un-consolidated. For this reason, it has been deemed necessary to consolidate a database that gathers and analyzes gaps within the current financial support ecosystem in the MENA region.

According to the International Finance Corporation (IFC), almost 63% of Micro-and SMEs in the region have no access to finance (Ghandour, 2016). Notably, there is a gap in accessing finance for pre-seed, seed and early-stage ventures.Therefore, in order to empower the upcoming generations of Arab entrepreneurs, appropriate financial frameworks for both banks and start-ups are needed to reduce the lending gap, provide vital homegrown capital as well as financial flexibilityfor start-ups to be able to move their operations to the nextlevel.

Still, it is important to highlight some of the major breakthroughs that have occurred in the few past years pertaining to accessing funding and finance. According to a report conducted by MAGNiTT, USD 290 million worth of investments were made across 88 disclosed deals in the year so far, which notably includes USD150 million investment in **Careem**, made by Kingdom Holding and other investors" (Hariharan, 2017).

The investor community continues to be heavily concentrated in a few countries, with the rest of the investors being scattered, a few each, across other markets. The UAE is home to about one third of all investors; Saudi Arabia and Lebanon combined account for another third; and all other countries together make up the remaining third of the investor pie. Lebanon has an exceptionally high number of funds for such a small country, driven by Circular 331 of the Central Bank of Lebanon; meanwhile, Egypt, one of the region's largest markets, has a relatively low number of funds for such a populous country with so many startups. The UAE continues to build a robust investor community, capturing a slightly increasing share of the overall investor market. Lebanon has also attracted a rapidly growing proportion of the investor community – with the share of the top three markets (UAE, KSA, Lebanon) growing from 55% to 64% of investors from 2013 to 2016. As countries in the region compete to be the premier destination for tech entrepreneurs, these three markets are flush with cash. Meanwhile, investment is getting more difficult to find in Palestine and Egypt. However, Cairo has witnessed the launch of several new funds, which are breathing new capital into the market, and has led to a slight uptick in 2016 (El Amine, 2017).

7. Sectorial Insights: Health Care Sector

Healthcare in the world is witnessing a deep transformation due to the emergence of new technologies. Big Data, machine learning, artificial intelligence, and the Internet of Things (IoT) are paving the way for new practices in health care such as Health (Mobile Health), Health IT (HIT), digital hospitals, and Digital Therapeutics (DT).

The global digital health market was valued at USD 61 billion in 2013 and is expected to increase nearly 300% to USD 233 billion by 2020 (Freifer, 2017).

It is projected that the "GCC healthcare market is projected to grow at a 12.1% compound annual growth rate (CAGR) from an estimated USD 40.3 billion in 2015 to USD 71.3 billion in 2020, according to Alpen Capital (Arabian Business, 2016). Hence, new opportunities are opening up before a new generation of Arab health entrepreneurs.

A study, relying on a sample of 61 startups across the Arab countries, conducted by Wamda Research Labs in 2016 highlighted the following findings:

- **A Burgeoning Community**. 90% of the startups included in the survey were created in the last five years, 55% launched in the last three years, and 30% are in their first year of operation.
- **Job Creation.** The 61 startups sampled for this study employ roughly 600 people in the region, and 16% indicated plans to hire more in 2016. These numbers confirm that the entrepreneurial economy in the Arab countries has a limited impact of the job market
- **Access to Funds.** As health startups in the Arab region mature, a small yet growing population of venture capitalists and angel investors are also investing in private health companies.

  > 49% of the surveyed startups obtained investment with 21% backed by venture capital, 15% have obtained follow-on funding rounds, and 11% have raised over USD 1 million
  > %51 did not have access to institutional investements and relied on family, friends and informal netwoks
  > 80% of the startups in this study cited the limited availability of capital as a barrier to growth

- **Technical Talent Gaps:** 77% experience difficulties finding the right people to hire, especially those with experience in healthcare coupled with business and technical skills
- **Minimal Testing Resources:** 41% have difficulty testing and conducting clinical trials to prove their concept. It indicates that the right technical infrastuctures and platforms are still lackinf in the Arab region
- **Lack of compliance clarity:** 57% are adversely affected by opaque health regulations that create excessive risks that in turnhold back greater involvement in the industry from potential investors and partners
- **Low consumer buy-in:** 69% of the startups in this study cited low consumer buy-in, specifically for digital health solutions as a barrier to growth

8. Stakeholders' Perspective

Entrepreneurs' Perspective

Access to Finance

Abdallah Absi – CEO of Zoomaal and GivingLoop (Lebanon)

To Abdallah, the Venture Capital (VC) pool in Lebanon remains small in comparison to abroad, and remains still quite risk-averse. VCs tend to have a rigid mode of work or techniques that they abide by, often creating barriers to entrepreneurs who have ideas that do not necessarily fit within a VC's particular model. Thus, many opportunities and potential are lost in the process. Therefore, there needs to be a change of mindset among VCs in order to shift this. Moreover, a new surge of VCs could be a changing factor; bringing in new VCs that have more adaptive models.

Antoine Skayem – Founder of F.R.E.E S.A.L and Riego (Lebanon)

FREE benefited from **BDL's Circular 313** – addressed to banks and financial institutions, providing subsidized loans for eco-friendly energy-related projects. Through this opportunity, Antoine was able to sell solutions and generate profit. The Lebanese government was able to take care of the interest rate by subsidizing the loan at a 0.75% interest rate.

Forging his way in, Antoine was able to secure 50% of his needed funding due to the decent profit margin resulting from the company's customizable solutions. By the end of the first year, Antoine had secured a driver, a vehicle and a warehouse to run the company's operations and thus created a profit-generated, organic and steady growth. In 2017, after being acquired by two equity shareholders (90% shareholding), FREE is now scaling-up and expanding in KSA.

However, similar sentiment concerning VCs and access to financing is shared by Antoine. To him, even when the ecosystem was just kicking off and capital was limited, Venture Capitalists were still highly risk-averse. Today, there is more and more funding flowing into the ecosystem, with a growing pool of talented and driven entrepreneurs creating impactful start-ups, but is still met with risk-averse VCs – which are often a red light to most potential start-ups who wish to take their businesses to the next level.

As a recommendation, VCs need to modernize their models and their way of "doing business" as it is often not conducive to the emerging start-ups nowadays. Often VCs tend to want to model Lebanese start-ups to those of foreign models; but many times, this does not yield much positive outcomes.

Houssine Saf - CEO of Multimedia Content Network; Vice-President of the Maroc Numeric Cluster (Morocco)

During the Focus Group Morocco (FGM), one entrepreneur shared his experience with **Intilak**[13] – a financial instrument set up by the Ministry of Industry, Investment, Trade and Digital Economy (MoI) in Morocco to help start-ups in the pre-early stage. Mr. Saf was among the recipients of the Intilak fund and received MAD 400K in financing, which for pre-early stage is a significant achievement. He had a business plan and prototype ready. However, Mr. Saf was not able to use any of the financing money because the funds were not readily made available to him. This is in part due to the multiple bureaucratic barriers placed by the Ministry of Economy and Finance (MoEF) in Morocco. All entrepreneurs from the same wave of funding as Mr. Saf were not able to unlock their funds and use them on time, which was problematic for their operations. The issue here was the clash between the policy of the MoI and the rigid rules and regulations that created an institutional barrier for the entrepreneurs and were not adaptable to the needs of the ecosystem.

"It's not enough to just set up a financial instrument such as a fund. Such funds need to be in tune with the reality of the ecosystem on the ground, in order to meet the needs of the ecosystem".

"Criteria and requirements should not be created in a way that are not adaptable to the current real-life situation faced by the ecosystem".

It is important to ***"recognize that innovation is the core foundation for enterprises".*** This innovation cannot come about without R&D.

"Liberate more budgets for R&D and loosen the financial restrictions for R&D funding".

"Put in place an entity that organizes crowdfunding procedures".

"Find flexible tools to promote innovation at the governmental level, as well as with the banking sector".

Based on this experience, a new fund called **InnovInvest** was put in place. It was launched taking into consideration the shortcomings of the previous Intilak Fund and was inspired to some extent by BPIFrance, reducing, in this case, the intervention of the public administration.
This is a very important example of adjustments implemented by the Moroccan entrepreneurial ecosystem, where the conflict between the different ministries, MoI and MoEF, specifically, is very common across MENA countries, including Lebanon.

[13] **Intilak** targeted high development potential start-ups that are less than 2 years old, in order to promote innovative projects in the following sectors: industry, information and communications technology (ICT) and advanced technologies (AT).

A similar situation emerged, where the MoI promoted the policy of tax reduction for SMEs while importing equipment to be included in new products for export. This measure was not up to par and did not satisfy the needs of the industrial sector, who, in some cases, was asking for tax exemption and not tax reductions to encourage innovation and more sophistication in the production processes or products. However, the MoEF did not accept such measures, arguing that this is tax evasion, and thus reduces the income of the state.

Mehdi Alaoui – Founder of ScreenDy (Morocco)

Ten years ago, there was only the Technopark that was present in the scene in Morocco. The establishment of the **CCG** (Caisse Centrale de Garantie) by the World Bank was a major breakthrough for the ecosystem. They injected, so far, MAD 700 million. Before that, there were some other successful funds, namely the **Maroc Numeric Fund (MNF)**.

Mehdi was able to raise MAD 3 million for one of his enterprises, but was not able to sustain this investment on behalf of **AfricInvest**, thus discouraging him from raising funds in his home country, Morocco. Many of the investors he had met with were not convinced that Arab entrepreneurs were able to raise this amount of financing. This is highly discouraging for upcoming Arab entrepreneurs, who often are faced with such discrimination when trying to raise funds. Nonetheless, this hampers the progress of entrepreneurship in their countries.

During the FGM, Mehdi had claimed that Lebanese entrepreneurs have better chances of raising funds than Moroccan entrepreneurs. The reasons for this are tied mainly to the strong Lebanese Diaspora, which is a huge advantage, as well as Lebanon's close proximity to the MENA region, where a lot of the funds are.

Given that Mehdi was not able to fully raise enough funds to launch his mobile development platform, **ScreenDy**, he chose to seek alternative paths to raising money. So, he decided, with his co-founders, to organize hackathons, which have proven to be highly successful, as, to date, they have organized over **50 hackathons**. The hackathons, part of the platform's **Hack & Pitch** program, have reached 20,000 students, 2,500 of which have participated actively in the hackathons, and **750 have created prototypes**, with many success stories.

Access to Talents

Abdallah Absi – CEO of Zoomaal and GivingLoop (Lebanon)

To Abdallah, there is a need for more nurturing for entrepreneurs at the early stages – as early as school, with educational programs that highlight the potential of entrepreneurship in creating change in the world to young students who are about to choose their next educational or career path. Abdallah looks for **"E.P.I.C."** qualities when recruiting team members to join Zoomaal or GivingLoop:

E = Execution – individuals who exhibit a hands-on attitude
P = Passion – individuals have to understand the values, mission and vision of Zoomaal/GivingLoop and show that they have a real drive towards creating impactful change
I = Innovation – individuals who "think-outside-the-box" and have a proactive attitude in solving problems and coming up with innovative and impactful ideas
C = Communication – individuals with good communication skills, who are friendly and adaptable

Antoine Skayem – Founder of F.R.E.E S.A.L and Riego (Lebanon)

Antoine believes that drive and passion are the key motivators and features of a successful entrepreneur. Antoine acknowledges the need to work with top talent, and thus surrounds himself with competent and driven teammates, to actively work towards closing the knowledge gap, especially within the energy sector of the country.

Ziad Sankari – CEO, CardioDiagnostics (Lebanon)

One key challenge facing entrepreneurs in Lebanon is Human Resources, problems with finding the right talent as well as with the mentality surrounding entrepreneurship in Lebanon. Young people tend to think of "family businesses when they think of entrepreneurship" and for many this is not encouraging, given their preconceived notions of what constitutes a family business – limited opportunities and ambitions, small markets, etc. It becomes discouraging for youth to take on the risks of being an entrepreneur, especially in Lebanon – who prefer to keep it safe by pursuing more traditional career paths.

Therefore, more ***"awareness interventions are needed to shift this mindset among the youth of the country towards the advantages of entrepreneurship".***

Thus to address this, two important recommendations are presented: 1) fostering better university guidance services for students about entrepreneurship, and 2) building the Human Capital talent pool – promoting qualified talents.

Mehdi Alaoui - Founder of ScreenDy (Morocco)

There is still much reluctance from entrepreneurs to start their own ventures in Morocco. Talent in Morocco exists, but it lacks support structures.

Qais Albusaidi – Business Developer, Framezen (Oman)

Qais is the Business Developer at Framezen, a company, established in early 2017 and specialized in animation as a base for video animation, mobile gaming, and interactive media. They produce mobile games and educational mobile apps, as well as interactive apps for children. They are currently under the wings of the Oman Technology Fund (OTF – venture capital).

The main issue that Qais and his team is finding is the access to human capital, specifically on registering recruited staff. The government imposes a number of restrictions on the talent that is recruited into start-ups and/or SMEs. **First, recruited staff must have the Entrepreneurs Card in order to be hired – which is a long process to get**. The Entrepreneurs Card is one of the key instruments to fulfill **Riyada**[14]'s main goals which include:

1. Supporting entrepreneurs to successfully launch and develop their businesses
2. Helping SMEs overcome the challenges they face while doing business and proposing solutions to address them
3. Fostering an enabling business environment for SMEs in order to enhance their contribution to the economic development of the Sultanate of Oman

(Riyada - Oman, 2015)

Second, a salary is dictated for the hired employees as well. It's decided based on the degree that the recruit has earned and is not issued based on their chosen major.

- Bachelor Degree – estimated at 600 Rials
- Master's Degree – estimated at 800 Rials (approximately 2,000 USD)

As seen above, such limitations pose barriers to entrepreneurship in Oman, as they restrict the mobility of young talented individuals in Oman.

[14] Riyada - Public Authority for SME Development in Oman

Ease of Launching, Maintaining and Closing a Business

Abdallah Absi – CEO of Zoomaal and GivingLoop (Lebanon)

To Abdallah, the ecosystem in Lebanon is only growing more and more, but not without a few hiccups. Acknowledging the key role that BDL's Circular 331 played on the entrepreneurship scene in the country, Abdallah also points out some of the challenges that it was faced with. One of the pitfalls of the circular is its limitation on Lebanese start-ups that wish to expand abroad. Circular 331 stipulates that any investment, direct or indirect, must be made in Lebanon. This, in itself, puts a barrier to many entrepreneurs who have a vision to expand internationally and not limit themselves to the Lebanese market. Here, it is important to ask whether we wish to ***"create copy-cats of foreign start-ups that are only based in Lebanon, or create projects that are innovative and disruptive, with major growth potential and value for Lebanon and on an international level?"***

Since 2010, around the time when Abdallah first emerged in the scene, much of his journey as a rising entrepreneur was done on his own. The concept of mentoring and coaching hadn't yet made big news, and funding was still limited. Nowadays, **mentoring is a key element** and shaper of an entrepreneur's growth and development. Furthermore, there are more seed funding as well as Angel investment opportunities emerging.

A major portion of the problems that entrepreneurs face in Lebanon boil down to the country's **infrastructural barriers** – issues with electricity, telecommunications (internet access mainly), transportation, water, etc. – basic needs that are not being met.

This is particularly problematic for tech start-ups that require a basic level of services to be provided for them to carry out their operations. This is one key reason why many entrepreneurs choose to incorporate abroad or move their operations overseas (**increasing brain drain**) – so as to avoid these burdensome and very often costly issues. The entire physical environment in which the ecosystem is hosted should be ameliorated if Lebanon wishes to enter in to the Knowledge Economy.

Antoine Skayem – Founder of F.R.E.E S.A.L and Riego (Lebanon)

As with many entrepreneurs on the rise today in the ecosystem, Antoine benefited from BDL Circular 331's support to the ecosystem. This included gaining exposure to accelerators, building his network, participating in and winning multiple competitions and awards - including monetary awards from UNIDO, Kafalat iSME, Berytech, Diane Foundation, and MIT Enterprise Forum Pan-Arab award – as well as benefiting from the co-working spaces that were made possible as a result of the funds provided by BDL to the Lebanese ecosystem, such as UK Lebanon Tech Hub's co-working space at BDD – which Antoine is currently a part of.

Knowing this, support mechanisms such as the UK Lebanon Tech Hub (UKLTH) and their various programs are conducive to the growth of entrepreneurs in the country. With the mentoring of UKLTH, Antoine was able to refine his business plan and make use of the accelerator's prime network to gain more reach and build his own network of clients and stakeholders. Berytech was able to help them not only with exposure but also to develop their hardware products as well.

The lack of expertise in certain sectors and the dominance of some industries over others is a lack that the ecosystem is facing in Lebanon. Today, much emphasis is made on start-ups that are tech-oriented and the ecosystem seems to cater to this industry much more than others. Even within the tech industry, hardware start-ups are relatively non-existent in the market as opposed to software-oriented ones. More diversified interventions, workshops, competitions and schemes should be designed to cater to other sectors (i.e. social enterprises), which in their own respect, are just as impactful as tech-oriented sectors.

From Antoine's perspective, the ecosystem is in fact growing and there more opportunities nowadays for upcoming entrepreneurs than before – especially via the business support mechanisms being put in

place for entrepreneurs (access to finance, mentoring, networking, refining business plans, pitching, workshops, competitions and awards, etc.). However, more investments should be made in seed funding.

There is also definitely the need for more theme-oriented or sector-oriented ecosystem support mechanisms and interventions. In fact, this trend has already started to kick off in Lebanon, with initiatives such as Berytech's Agrytech accelerator, for example, that is focused on agriculture and food-oriented businesses.

Ziad Sankari – CEO, CardioDiagnostics (Lebanon)
Logistics is a major barrier for tech entrepreneurs such as Ziad. Given the many infrastructural and institutional (bureaucratic) barriers that Lebanon faces, it becomes ***"difficult to convince people to invest in Lebanon".***

Marc-Antoine Bou Nassif – CEO, L'Atelier du Miel (Lebanon)
Marc-Antoine is yet another successful Lebanese entrepreneur who claims that logistics are a major hindrance to entrepreneurs in the country – ***"the system is archaic and often does not reflect the current trends of the ecosystem and what is being done on the ground".***

Mehdi Alaoui - Founder of ScreenDy (Morocco)
There is a problem with the innovation value chain in Morocco. For example, an industrialist will not be able to value a start-up or may not value it properly. Industrialists purchase the start-ups that meet their needs, as is, and this creates a problem as it breaks down the value chain. So, in fact, start-ups are not properly absorbed by the industrial sector. Another issue here is that most start-ups do not guarantee a back-up plan, which means that they tend to accept whatever deal is offered to them by those industrialists.

Qais Albusaidi – Business Developer, Framezen (Oman)
In Oman, there is a problem of IP protection. Unfortunately for Framezen, the team was not able to protect their IP fully, even though they have prototypes ready, because of the bureaucratic and costly hassle of the whole IP registration procedure. This, in itself, is a major dent in the progress of start-ups, both for hardware-and software-based ones that need full protection for their ideas.

Relationship with Public Authorities

Antoine Skayem – Founder of F.R.E.E S.A.L and Riego (Lebanon)
For Antoine, Lebanon's entrepreneurial ecosystem is definitely on the rise, but is also met with many challenges that are often forming barriers to growth. In his opinion, the entire legal framework governing the ecosystem in Lebanon should be optimized for entrepreneurs.

a. Bankruptcy Laws and the Culture of Failure

According to the International Trade Administration (2017), Lebanon "does not have a Bankruptcy Law; however, the Commercial Code (Book No. 5, Articles 459-668) and the Penal Code govern insolvency and bankruptcy". Entrepreneurs with failed start-ups "can resort to the Labor Court and the National Social Security Fund to recover pay and benefits from local and foreign firms in bankruptcy", yet such procedures are met with so many bureaucratic barriers and delays that it becomes burdensome, expensive and time-consuming for entrepreneurs to file for bankruptcy (International Trade Administration, 2017).

Moreover, to this day, the concept of failure, and the culture around it, is not well developed. Failure among start-ups is an unavoidable fact. However, in Lebanon, failure is met with much cultural stigma, further aggravated by lengthy and costly procedures to close a business. As a result, "what remains is small teetering SMEs where entrepreneurs are stuck, instead of a more healthy system that

allows these same entrepreneurs to learn from their failures, shut down, and build new stronger enterprises" (Ministry of Economy and Trade - UNDP, 2014).

b. Bureaucratic Procedures for Registering Companies

For Antoine, one of the major challenges facing entrepreneurs in Lebanon is the difficult, often disorganized bureaucratic procedures that govern registering companies in the country. In Lebanon, a capital of 20,000 USD is required to incorporate a company (S.A.L.), which is also a criteria for benefiting from BDL's Circular 331. This is a barrier for many entrepreneurs that are just getting launching and who are struggling to find seed or even pre-seed funding to get their start-up going.

Furthermore, compounded by burdensome administrative procedures and paperwork, not to mention duplication between various authorities, registration procedures are a hindrance that should be addressed in order to optimize them, make them cheaper and easier for entrepreneurs (Ministry of Economy and Trade - UNDP, 2014).

Marc-Antoine Bou Nassif – CEO, L'Atelier du Miel (Lebanon)

Corruption is yet another overarching barrier for entrepreneurship in Lebanon – there is a ***"problem with 'pulling strings' in the government that is highly politicized".***

Further **recommendations** presented by the participating **entrepreneurs** at the **Focus Group Lebanon** included:

1. Establishing more legal reforms to streamline bureaucratic procedures
2. Promoting more frequent but smaller-scale public-private-partnerships – more collaboration with the government towards promoting innovation in Lebanon

Qais Albusaidi – Business Developer, Framezen (Oman)

Main institutional barriers to entrepreneurship in Qais's opinion are the delays in payments made by the government. Given that Framezen started out providing services such as animations and games to government authorities, they required their payments to be made in advance. However, most of the cases ended up with Framezen being paid their advances, which should have been completed first, at the end of their services provided. These bureaucratic delays cause loss of time, money and productivity to emerging start-ups that have started to become profitable and need a steady cash flow to maintain their operations.

Investors' Perspective

Bassel Aoun – Project Manager, Kafalat (Lebanon)

"Venture Capitals are the right tool for entrepreneurs to access funding and for raising funds from the market".

"BDL's Circular 331 was a game-changer, especially for the banking sector – which is Lebanon's only source of funding at the moment".

It is important to mention that ***"we need several cycles of investments to prove that a VC's model is effective".*** Thus, there is much to be learnt and gained from the current financial situation. Furthermore, ***"we have to build companies that are able to exit at some point".***

There is a problem of seed funding in Lebanon. Two scenarios may be suggested to address this issue:

1. Have VCs who are Series A- and Series B-oriented allocate 10% of their funds to seed money;
OR
2. Establish a purely seed-oriented VC fund – but this is more challenging to achieve as you need to "provide 'smart money', which requires numerous resources and a significant amount of time to accomplish"

"New laws specifically pertaining to start-ups, establishing new VCs and investments should be made in Lebanon to facilitate all relevant procedures".

To improve the regulatory system around entrepreneurship, Lebanon could take inspiration from French laws and ***"move towards promoting regulations for the establishment of SASs (Societé par Actions Simplifiée) which are more adapted to start-ups and offers more advantages than standard SALs or SARLs".***

An SAS is a French-based hybrid law that offers more flexibility to entrepreneurs than an SAL. With an SAS:

- You can build your own company status
- You are not restricted to a minimum capital
- You can shut down operations easily
- You can have 2 shareholders
- You can enter new investments easily

"In Lebanon, SAL regulations should be adjusted as you should be allowed more flexibility in bringing in more investors into your company, especially as the company starts to grow".

Jihad Bitar – General Manager, SmartESA (Lebanon)
"The issue of return of investment is very important".

So far, Lebanon has a small track record in this regard and still needs to mature enough to create a significant impact in the ecosystem.

"Because Lebanon has weak representation abroad, we have to rely on our own networks, and our own expertise to move ahead. If we can really help entrepreneurs break foreign markets, then this could weigh more than patenting in regards to entrepreneurs".

Dr. Nicolas Rouhana – General Manager, IM Capital (Lebanon)
Lebanon certainly lacks the basic infrastructure that is conducive to the promotion of a healthy ecosystem. In fact, this is an issue that is ***"heavily rooted in the Lebanese culture and may take years to create a change in this respect".***

However, much change has indeed taken effect over the years in ***"access to low-cost services and support mechanisms such as coding bootcamps, access to ICT, networking, and increased mobility".***

Ramy Boujawdeh – General Manager, Berytech (Lebanon)
"The ecosystem is currently experiencing a significant learning curve, but much of today's model could be changed for the better".

"We need to work more on teaching start-ups how to fundraise and how to network".

B&Y Ventures is a good example of how new, small-scale funds are pushing seed funding to the front of the line.

"One of our biggest problems is with the concept of failure – which is non-existent in the country".

"Bankruptcy laws do not currently exist in Lebanon" and this is creating great discord for entrepreneurs with failed start-ups who are not able to learn from their mistakes, start over and continue other operations if they wanted to.
In regards to advancements made in the ecosystem regarding prototyping, an important issue for entrepreneurs in hardware, Berytech is currently launching their new fab lab which is dedicated mainly to hardware but also incorporates electronics (Arduino, Raspberry Pi, etc.).

"The Fab Lab will help entrepreneurs produce MVPs that they will be able to present to investors, at least as a first phase".

Hani Mawlawi – Director, Lebanon Science and Technology Park – Tripoli (Lebanon)
"Lebanon should adopt the Patent Cooperation Treaty (PCT) as it will be beneficial for entrepreneurs".

"Many entrepreneurs are reluctant to build a start-up because they are too afraid that their ideas will be stolen".

Gabriel Deek – General Manager, Omni Systems (Lebanon)
"More enforcement is needed concerning the Copyright law in Lebanon".

"If you are not the owner of the IP, you are not allowed to engage in any legal action concerning IP protection".

"More initiatives like the Tripoli Economic Zone should be promoted in the country, and especially in Beirut".

An attempt to create a technology zone for Lebanon came out in the early 2000's with a project called the Beirut Emerging Technology Zone (BETZ) but had failed before it was even launched. Situated in Damour, BETZ was meant to act as a pilot to increase competitiveness and entrepreneurship in the country. Unfortunately, as with many Lebanese promising yet unfinished projects, BETZ suffered greatly due to the country's chronic political strife.

"Amendments to IDAL's Investment Law No. 360 should be made because it does have articles that are in favor of tech-oriented start-ups for example that should be improved".

Ecosystem supporters from the **Focus Group Lebanon** concluded with the following **recommendations**:

1. Engaging the Diaspora more
2. Connecting with other regional entrepreneurial ecosystems to bridge the networking gap
3. Laying down the foundations for new VCs
4. Establishing more national-level prototyping services and facilities
5. Lobbying for the establishment of a 'Ministry of Innovation'
6. Introducing more sustainable grant programs at the early stage
7. Streamlining company creation and registration procedures

Walaa Hamdan – General Manager, Startup Oman (Oman)

Startup Oman is an entrepreneurship ecosystem platform, co-founded by **Mr. Ali Kamal Daud**, who is an entrepreneur and founder of the **Daud Group. The creation of Startup Oman was part of their CSR strategy**. It all started in 2015 as an online platform that now has 1,700 members, mostly SMEs and 5,000 people on their social media platforms. Their target audience is mainly entrepreneurs and academics.

As part of their active programs, Startup Oman hosts, every month, **Startup Grind Muscat** – which is part of Startup Grind internationally – "a global startup community designed to educate, inspire, and connect entrepreneurs. It is powered by **Google for Entrepreneurs**. [They] host monthly events in 250 cities and 100 countries featuring successful local founders, innovators, educators and investors who share personal stories and lessons learned on the road to building great companies"[15]. Another event is the **Caribou Chats** which is a networking and showcasing meeting point targeting aspiring entrepreneurs in the scene. The last Caribou Chat was held in October 2017 and featured talks by **2 start-ups:**

- **Nadrus**: a regional Arabic online teaching and learning platform
- **Thawani**: a mobile wallet solution, one of the first in Oman

The main challenges faced by entrepreneurs in Walaa's opinion are:

- **Regulation** – how long procedures take
- **Ease of doing business** – the international indicators show that Oman is ranked well in terms of ease of doing business. However, in reality, this is not always the case.
- **Delays in procedures, bureaucratic barriers.** The government reduced the time to register a business. However, registration is not the issue, but it is the operational procedures that come afterwards that are problematic – actually getting started in terms of operations.
- In most cases, start-ups need to acquire an Environmental Approval الموافقة البيئة.
- **Many procedures are archaic** and need to be modernized.

Malak Al Shaibani – Director General, National Business Center at Knowledge Oasis Muscat (KOM) (Oman)

"The problem is with operating after registration of the company, not to mention an issue of human capital mobility".

Government corruption as well as bureaucratic barriers, especially for hiring talent, are major burdens on Omani entrepreneurs. Impositions from the government include delays in investment decisions, conflict of interest, loss of time, as well as lack of transparency in deals made.

Furthermore, there is a lopsided approach that the government has towards the concept of sanctioning. For fear of entrepreneurs taking advantage of the system and its regulations to their benefit, particularly when it comes to hiring talent that are highly suitable and needed for the position but who do not possess the right degree, according to the government's criteria (ex. a Master's degree), the issue becomes that ***"the government authorities are negatively sanctioning the 98% of the cases that are not in fact violating any law, because of the 2% of the cases that might actually go and abuse the system. And this not fair, as they end up penalizing SMEs before any violation is even made".***

Another problem is with payment in advance – most SMEs have cash issues other than that of the manpower issues. If you are dealing with the government, they cannot give you the money in advance.

"They apply the same regulations to large corporations as they do to SMEs, which is not realistic".

[15] https://www.startupgrind.com/muscat/

Bankruptcy laws are another issue. ***"It's not easy to close a company. There are no bankruptcy laws in Oman".***

There is definitely a mobility issue. Government authorities are placing physical restrictions for entrepreneurs on where to open their companies, location-wise and this is highly discouraging. They are dictating where start-ups can open their business.

There are also added behavioral issues that hinder entrepreneurship in Oman. **The challenges lie in the ability 1) to recruit, 2) to retain, and 3) to ensure performance of human capital.**

"There is a fear of failure in our cultures".

"You have to have an entrepreneur government. The government needs to be able to think like an entrepreneurs. Unfortunately, our governments are like dinosaurs".

- ***"Performance is in the eye of the beholder"*** – unfortunately, government employees do not have this attitude, **because no one will hold them accountable for their non-performance.**

There may even be some **religious behavioral patterns** at play in Oman that have become barriers to entrepreneurship as well. For example, company productivity is reduced when certain employees choose to take longer prayer breaks than others.

Why do so many Arab countries face the same problems collectively?

1. Lack of a national agenda – there is no unified strategy for innovation and entrepreneurship
2. Lack of accountability – there is a need to introduce KPIs

The case of **Malaysia** is a good example of the importance of having a national agenda, as they have adopted a National Innovation System for the entire country (see Lessons from International Entrepreneurial Ecosystem).

Ibtisam Al Farrouji – Knowledge Oasis Muscat (KOM) (Oman)

Many in the public sector believe that when they make the shift to e-government, that they will no longer need a "front line" desk – ***"They think that having an e-government will solve all their problems, but what they don't know is that at some point, you have to meet the client".***

Even so, most of the government's front line employees are not well trained, and this is the main issue with servicing clients.

Omaima Al Mahthouri – Incubation Manager of the Research Council at Innovation Park Muscat (IPM) (Oman)

The Innovation Park Muscat (IPM) is considered a science-based park, whose main target sectors are: health, biotech and food, water and environment, and energy. **The Research Council is focused on funding research** – industrial, academic, community-based, and educational (school-level). The innovations that they fund fall within those sectors. **The main goal is to improve the culture of research and innovation in Oman.**

According to the global indices, Oman is only spending 0.17% of its GDP on R&D, which is considerably low compared to Tunisia with 1.1%. Other Arab countries are below than 1%.

Unfortunately, "***R&D is not attractive for the government to finance R&D projects"*** that could probably take 5-6 years before any commercialization can take place, so they are not encouraged to invest. As the Research Council is securing their funds from the Ministry of Finance, a lot of their

main struggles come from **trying to convince government agencies of the importance of funding research.**

What has the Research Council done to shift this dynamic?

They rebranded the Research Council in 2013. They wanted to dive into the new age of innovation. Unfortunately, 'innovation', 'entrepreneurship', and 'ecosystem support', etc., are becoming buzzwords, so there is much attention in this, creating more and more competition for funding. They are still trying to get the attention of the private sector (large corporations) and public sector, as well.

Access to Talent and Researchers

The park is open for local and international researchers – so mobility is open.

They are waiting now for an incentive package to present to these researchers – **the idea is to make a free zone**. They have been **waiting 3 years** now for the legal regulations to be implemented on this issue. They have already lost investments because of this; many investments were lost to Dubai, for example.

"There is a lack of cooperation at the scientific and innovation level between Arab countries, unfortunately".

IPM's Perspective on Collaboration between Arab Countries

Abroad, Arabs seem to work together perfectly well and showcase a good amount of teamwork and solidarity, however, this dynamic does not translate regionally somehow. When it comes down to the real implementation of projects within the Arab region, many fail.

"We can start by opening up to other countries – inviting experts and international professionals to highlight that the Arab world is open for business".

It seems that there is a **common trend and attitude towards adopting European or American entrepreneurship models**, which in some cases could work, but in many cases leads to underestimating perhaps the talent and skill of Arab youth as originators and creators.

Jasim Al Alawi – Senior Business Developer, Sas Center for Entrepreneurship (Oman)

Example from Oman on the Positive Collaboration between Actors

'Upgrade', is a program that focused on final year university student projects that could be transformed into start-ups. Below are some of the program's key features:

1. Seed fund up to 12K Omani Rials with 0% equity
2. Comprehensive incubation and business development program
3. International internship in start-up development

There was a high level of collaboration – from the Information Technology Authority of Oman (ITA), the Research Council, Omantel, Innovation Development Oman, Riyada (the SME Authority of Oman), and Ibtikar Development Oman.

Oman Technology Fund (OTF) has now engaged in the 2nd season of the 'Upgrade' program. They started to get approached from other Arab countries for replication. However, ***"more effort is needed for collaboration at the local, national level".***

Universities' Perspective

Dr. Bijan Azad – Director, Darwazah Center for Innovation Management and Entrepreneurship, AUB (Lebanon)

"There is a lack of seed funding and even a lack at the early stage funding as well".
The challenge in Lebanon is on "popularizing the spirit of entrepreneurship and shifting mentalities among Lebanon's youth towards entrepreneurship".

"Entrepreneurship should be bred even before [students reach] university-levels, at school".

Dr. Ali Chehab – Professor, Electric and Computer Engineering Department, AUB (Lebanon)

Much progress has been made to incorporate entrepreneurship in curricula of the American University of Beirut (AUB). As a matter of fact, the Faculty of Engineering and Architecture (FEA) has included an entrepreneurship track in their engineering programs. Moreover, through the students' Final Year Projects (FYP) – which are mandatory for graduation – successful senior student projects that have commercialization potential are supported; and students are helped in accessing funding as well as mentoring and business development. Therefore, ***"changing the type of programs that AUB offers is a major step forward".***

Another problem is retaining talent youth in the country. This has a huge cultural dimension that is difficult to tackle.

Dr. Najiba Elamrani - Head of Electrical Engineering Department, Faculty of Science and Technology - Fez (Morocco)

The issue that Moroccan entrepreneurship faces at the academic level is that the professors' university work is so over-charged that many of them do not have the time to engage in or run their own enterprises. So, motivation is needed. Moreover, entrepreneurial guidance and motivation needs to be directed towards the students themselves also. Therefore, professors have a supportive role to play here.

The Fes City of Innovation was a good example of a success story waiting to happen. On paper, it was impressive, however, now, there is not much implementation. Employees are hired by the government, and to Dr. Elamrani, this should not be the case. Unfortunately, the staff is not held responsible for their work.

At the Fes City of Innovation, there were 3-4 start-ups. However, they were run by students undergoing incubation but who were still pursuing their degree. This was problematic as the students' attention was divided between working on their start-up and their academic work. Therefore, this is challenging for student entrepreneurs and much potential is lost like this. Interventions at the organizational level for promoting student entrepreneurs need to be made in order to address this loss of potential.

Some Recommendations

It is necessary to start promoting an entrepreneurial spirit at a young age – in schools, and not wait until students are in university to start to build this mentality.

"Find the right mechanism that promotes more implementation at the level of the entrepreneurship programs that already exist, because it is not a matter of financing, as the financing exists. But financing alone is not enough, given that no one is fully implementing these structures".

"Find a middle ground between the initiatives of the MoI and the MoEF – enhance inter-agency coordination at the ministerial levels".

"Establish a "Cellule de Veille" (Supervising Structure): established at the level of the City of Innovation, to follow up on R&D results, to see if there are any projects that have the potential of being patented".

Dr. Anass Kettani – Professor at the Faculty of Sciences, Hassan II University, Casablanca (Morocco)

"There is a lack of communication and a lack of common strategies".

"We need a platform that pools together all key actors of the ecosystem".

There is the question of the culture of entrepreneurship in university settings. Many professors were reluctant to get on board with engaging in entrepreneurship at the academic level. However, there is progress being made to establish fab labs, prototyping labs, etc. More support mechanisms need to be put in place however.

"There is still the fear of risk and fear of failure that does not encourage academics from pursuing entrepreneurship ventures".

Also, student entrepreneurs need to be motivated to establish their own ventures but that do not overshadow their academic career either (their grades, etc.).

In Morocco, student entrepreneurs can obtain a **Statut Etudiant Entrepreneur** or a status that indicates they are student entrepreneurs at their respective university – students become incubated in the university setting, and benefit from the university facilities, at the same time being able to pursue their degree.

Dr. Kettani and his team are currently planning to run a pilot project in Morocco and Tunisia named the **SALEEM project**, which is an ERASMUS + project, coordinated by the AUF. The objectives of the project are:

1. To promote student entrepreneurship in Morocco and Tunisia by setting up, within the higher education systems of each country, an official **status** and **support poles** for **self-entrepreneur students** (student entrepreneurs).
2. To accompany the ministries of higher education of Tunisia and Morocco in the establishment of a national system on student entrepreneurship.
3. To strengthen the capacity of higher education institutions to support student entrepreneurs in 4 pilot cities (Rabat, Casablanca, Tunis-Carthage and Sfax) in partnership with employment agencies and economic actors.

Dr. Fadia Homeidan – Director, Office of Grants and Contracts, AUB (Lebanon)

From the perspective of the entrepreneurial ecosystem at the academia level, the main problem faced within AUB concerning the adoption of entrepreneurship in the university is **"conflict of interest**". The Center for Research and Innovation (CRInn) at AUB took two years to materialize because of this issue. The idea was that students were not allowed to work in the start-ups that were being established by the faculty members. They could be hired as interns (unpaid) but not be hired as employees, given that this may conflict with their academic standing. Another reason for this is that ***"AUB does not own the IP generated from these student-led projects and to control the use of the university's resources and facilities by the students, they have restricted the participation of students in these projects".*** However, the situation is slowly changing. ***"Top graduates are able to be hired as employees in those start-ups".***

AUB is currently working on an **IP policy** directed towards undergraduate student entrepreneurs, as this faction is more difficult to regulate in terms of IP (problems figuring who owns what).

Unfortunately, the government does not recognize internships or non-class related work experience as credits, which is a problem for many students who wish to use this experience in their educational or even career pursuits. Therefore, amendments to this should be set in place at the governmental level (lobbying to the Ministry of Education and Higher Education) – "promotion of entrepreneurship practicums for students".

Some of the **key challenges** Dr. Homeidan discussed were:

1. Lack of IP protection
2. Problems with customs – the system is highly corrupt and seems to be functioning in the absence of any regulations or government monitoring
3. The Lebanese government considers start-ups in the same category as SMEs and this creates institutional and legal problems for start-up registration
4. Issue of IPRs in general

Professor Mounir Rifi – Director, Superior School of Technology, Casablanca (Morocco)

What is missing in the Moroccan ecosystem are the intermediaries, the support mechanisms for technology transfer.

Mr. Riffi is trying to propose a project for a Technology Transfer Office (TTO). He and his team have raised MAD 8 million in internal financing so far. Their target is to reach MAD 12 million.

The TTO will pool together academic experts and successful entrepreneurs with student entrepreneurs. **The TTO platform will comprise 4 levels:**

1. Industrial Processes
2. Prototyping
3. Focus on ICT
4. Business Management and Marketing/Incubation

In order to address the issue of human capital and promoting a culture of entrepreneurship, especially among Lebanese youth, **Focus Group Lebanon** participants from **Academia** collectively recommended the following:

1. Enhance university-industry coordination to cater to job market needs – matching qualified graduates, especially in ICT, to the right industry/sector
2. Facilitate access for entrepreneurs to university services and facilities
3. Promote scaling-up programs for start-ups as well as programs for management skills – moving away from the "Founder Mentality"

Public Authorities' Perspective

Lawyer Linda Kassem Moukashar – Senior Legal Trade Specialist/Legal Consultant, UNDP/Ministry of Economy and Trade (Lebanon)

Many of Lebanon's laws that pertain to innovation and entrepreneurship are outdated – many dating back to the 1930's. Yet, amendments are currently being made:

- **Amendments to the Patent Law** – which is a framework law whose implementation is difficult given the current institutional void experienced in the government. In Lebanon, the patenting system is merely a *"registry and not more than that, creating a problem for entrepreneurs, especially regarding IP protection".*
- **Amendments to the Copyright Law – dating back to 1999**
- **Amendments to Industrial Designs**

Furthermore, a reforms package impacting SMEs is currently in the pipeline at the Ministry of Economy and Trade (MoET), waiting for approval by the Parliament:

- Amendments to the codes of commerce for all types of SMEs and start-ups
- Amendment to types of companies (SAL, SARL, etc.)
- Promotion of a bankruptcy law
- Establishment of a one-stop shop for business registration
    - Lawyers may have an objection to this as it could conflict with their line of work.
- Incorporating sole partnership companies
- Drafting insolvency laws and for insolvency practitioners
- Draft law on private equity funds
- Law on preferred shares (stock options)
- Promotion of e-payment and e-transaction laws
- Amendment of the Investment Law No. 360

"The MoET should appoint a separate governmental agency or entity that strictly governs and implements IPR in Lebanon. Such an entity could even be established within the framework of currently existing intellectual theft and cyber security offices, for example".

"There is clearly a lack of communication between the different governmental authorities and this creates the problem of duplication of efforts and interventions".

Yassine Ouardirhi - Representative of the Ministry of Industry, Investment, Trade and Digital Economy (MoI)

The MoI in Morocco is in charge of **3 axes of innovation**: governance, financing, and mobilization of talent. A 4th axe also exists concerning providing infrastructure, or innovation clusters, for instance. Governance is a major institutional problem. There is a lack of coordination as well and priorities should be made concerning strategic sectors in Morocco.

The Moroccan government has to national strategies, one for industry and one for digital technologies.

"If we were to rank the Moroccan ecosystem, Morocco could be ranked, if out of 5, as a 3 out of 5".

The institutional strengths of Moroccan entrepreneurial ecosystem lie in the following argument: existing government initiatives, in terms of R&D financing and commercialization, for example.

- The government collaborates with the private sector. There are relationships being formed between R&D institutions and the government.
- Relationships between private sector and research institutions
- Relationships between the start-ups and the ecosystem

The absent group in the ecosystem, in his opinion, are the large groups, even if SMEs make up more than 90% of their economy. There are at least 4-5 large corporations per sector in Morocco. ***"These companies need to integrate more innovation and entrepreneurship in their strategies".***
The government has a role to play in incentivizing these companies towards integrating entrepreneurship in their corporate strategies – they need to be institutionalized on behalf of the government.

One of the problems that the ministry is facing now is the issue of dealflow - the flow of the financing. It's not enough to have financing alone. The core of the issue of financing is essentially that it is risky, thus **investors have become increasingly risk-averse**.

The Ministry's Perspective on the Intilak Fund: What has it accomplished?

Since 2011, the fund has invested in 60 innovative projects, worth MAD 60 million on average. Normally, the number of beneficiary start-ups should have been more, since the fund was allotted MAD 380 million, thus to be distributed over more start-ups.
The fund still exists today, continuing their operation from previous years, but is not taking on new batches.

Recommendations for Morocco

- Enhance public-private partnerships and their strategies
- Set up a Technology Transfer law
- Support doctoral students in their pursuits of entrepreneurship ventures → facilitate the regulations
- Promote practical and hands-on working experience for prospective student entrepreneurs, and not only theoretical entrepreneurship education

Recommendations for Lebanon

Recommendations from the **government** representatives present at the **Focus Group Lebanon** session included:

1. Increasing coordination among governmental authorities to reduce duplication of efforts to further meet entrepreneurs' needs
2. Preparing and training lawyers on the specificities of the entrepreneurial ecosystem, especially with VCs (terms, nomenclature, operations, etc.)
3. Raising awareness among upcoming lawyers about entrepreneurship – collaboration with the Beirut Bar Association
4. Establishing a recommendation committee within a government unit responsible for innovation, technology and entrepreneurship in the country

Concluding Remarks

Many of the recommendations expressed in the FG Morocco are shared with those recommended by the FG Lebanon, namely regarding the need to enhance entrepreneurship education and training among youth, starting even at the school level. Also, there is a strong need for public-private partnerships and collaborations, not to mention enhanced coordination between government institutions and agencies, to promote communication and reduce redundancy of efforts and interventions.

In Morocco, access to finance was not mentioned as significantly strong of a barrier to entrepreneurship in the country, as much as the lack of support mechanisms and structure, proper implementation of these mechanisms and overall governmental bureaucracy.
In Lebanon, on the other hand, there remains a lack of access to finance, especially at the pre-seed and seed stages. However, Lebanon, does in fact in its own right, boast a wide network of ecosystem support actors and mechanisms, namely via incubators, accelerators, co-working spaces, awards and competitions, and now recently, a new fabrication lab by Berytech; all of which are offering impactful support to upcoming entrepreneurs in the country, especially for women, in particular.

In Oman, there is a strong lack of access to human capital, mainly due to strict government restrictions, regulations, and institutional (bureaucratic) barriers. Moreover, corruption and conflict of interest at the level of the government, not to mention some private sector entities, are further stones in the path of Omani entrepreneurs.

More importantly, in Oman, as is the case with other Arab countries that seem to face the same challenges, the problem is both in the lack of a national agenda and/or unified strategy for innovation

and entrepreneurship, and in the lack of accountability, which demands the need to introduce Key Performance Indicators (KPIs) for all actors in the entrepreneurship ecosystem.

9. Entrepreneur Portraits

Below is a snapshot of 4 successful entrepreneurs from Lebanon, Morocco and Saudi Arabia.

Antoine Skayem: Lebanon

Antoine Skayem's entry into the entrepreneurship ecosystem of Lebanon was similar to that of many Lebanese youth, frustrated with the status quo of the country. Not satisfied with today's traditional employment model – the "9-to-5" work days - Antoine's entrepreneurial spirit was fostered purely out of hunger and passion for creating an impactful company of his own, that addresses the failing infrastructure of Lebanon, especially within the energy sector – significant gap between the supply and demand of electricity, high cost of energy). Thus, Antoine decided to launch his company **FREE S.A.L. in 2012**, a customized energy service consulting company covering Energy Audit, Renewable Energy, LED Lighting and Agricultural Solutions. Each department proposes and integrates customized solutions based on client needs. Antoine started educating himself, in the early stages of his company, on energy-related topics, acquiring certificates and eventually positioning himself as an energy expert in the field – few has existed in the market during that time period (2012-2013).

Antoine benefited from two of **Banque Du Liban's (BDL) Circulars**, the **first** was **Circular 313** – **addressed to banks and financial institutions, providing subsidized loans for eco-friendly energy-related projects**. Through Circular 313, Antoine was able to sell solutions and generate profit with FREE. The Lebanese government was able to take care of the interest rate by subsidizing the loan at a 0.75% interest rate. Forging his way in, Antoine was able to secure 50% of his needed funding due to the decent profit margin resulting from the company's customizable solutions. By the end of the first year, Antoine had secured a driver, a vehicle and a warehouse to run the company's operations and thus created a profit-generated, organic and steady growth. In **2017**, after being acquired by two equity shareholders (90% shareholding), FREE is now scaling-up and expanding in KSA.

The **second** circular from BDL that Antoine benefited from, as with many entrepreneurs on the rise today in the ecosystem, was the **Circular 331**, and its support to the ecosystem. This included gaining exposure to accelerators, building his network, participating in and winning multiple competitions and awards - including monetary awards from **UNIDO**, **Kafalat iSME**, **Berytech**, **Diane Foundation,** and **MIT Enterprise Forum Pan-Arab** award – as well as benefiting from the co-working spaces that were made possible as a result of the funds provided by BDL to the Lebanese ecosystem, such as **UK Lebanon Tech Hub**'s co-working space at **BDD** – which Antoine is currently a part of.

Knowing this, support mechanisms such as the UK Lebanon Tech Hub (UKLTH) and their various programs are conducive to the growth of entrepreneurs in the country. With the mentoring of UKLTH, Antoine was able to refine his business plan and make use of the accelerator's prime network to gain more reach and build his own network of clients and stakeholders. Berytech was able to help them not only with exposure but also to develop their hardware products as well.

It wasn't until **2014** that Antoine branched out into the water-food-energy nexus and **Riego** came to be - a solar powered, agricultural irrigation dynamic-control device that enables users such as farmers to optimize irrigation water consumption through monitoring weather and soil parameters, tree growth, water and fertilizer concentration. The idea for Riego initially stemmed as a result of the drought that hit Lebanon back in 2013 which damaged 60% of the country's agricultural production yield, and thus Riego ultimately set out to address this issue and find a viable and proactive solution to reduce water consumption. Riego is a prime example of the role that innovation and technology, via the

establishment of targeted accelerator programs, plays on the promotion of start-ups that are geared towards achieving SDGs (namely **SDG 2** on Food Security and Sustainable Agriculture).

Antoine believes that drive and passion are the key motivators and features of a successful entrepreneur. Surrounding himself with competent and driven teammates, Antoine is actively working towards closing the knowledge gap, especially within the energy sector of the country.

Mehdi Alaoui: Morocco

Mehdi was still a student at the Université de Paris Sorbonne when his passion for mobile applications was born. In 2001, Mehdi met his mentor Khalid Tabyaoui. Since 2001, Mehdi participated in competitions and won multiple awards.

- **2002** – Finalist at the international mobile development competition "Siemens Java Mobile Masters" and wins the Nokia Innovation Award
- **2005** – Wins the Special Jury Prize at the "Challengers" competition organized by the company 2M[16]. Mehdi received significant media coverage for this mobile application at the national level
- **2006** – Joins the "Réseau Entreprendre Maroc" and becomes a laureate of this network, which would help him to establish his upcoming enterprise
- **2007** – Completes his education[17] and starts his company, Media Mobility
- **2012** – The birth of ScreenDy. Mehdi benefited from Khalid Tabyaoui's (ScreenDy co-founder) prime networking and contacts to establish a solid network of his own.

By the end of **2012**, Mehdi has secured funding worth **USD 300K from a Business Angel**. In Morocco, ScreenDy benefited from the support services of *Softcentre* (software innovation), coaching and mentoring by *Startup Maroc* and especially the *OCP Foundation's* acceleration program which enabled them to go to in Silicon Valley, and rethink their "go-to-market" strategy to open up to the market.

ScreenDy continues to participate in several international competitions and wins quite a few, with the Government of Dubai, Microsoft, Blackberry, Axa, Zurich Insurance, and others. During this time, ScreenDy were renewing their collaboration agreements with former customers.
Basing themselves on the progress that ScreenDy has already performed, Mehdi and his co-founders decided to change their business model. Initially used internally to develop applications for their customers, the ScreenDy platform becomes free and open source for the growing community of developers. The first commercially exploitable version was then presented at the **TechCrunch Disrupt 2015** event, one of the most prestigious start-up conferences in the world.

Knowing that there are around 30 million web developers around the world, many of whom would like to move into mobile development, and that existing platforms like Appcelerator, Xamarin, and Phone Gap offer only hybrid solutions that are difficult to use and exploit for mobile, the idea of offering an integrated platform that was powerful enough to create mobile apps was very well received. Thus, the intuitive and convenient use of ScreenDy made it possible to create, quickly and without a line of code, a 100% local and customized application.

The platform therefore created a drastic reduction in development costs and a huge gain in productivity. Knowing this, Mehdi's ScreenDy was perceived at that time to be a true potential disruptor for the mobile sector and cause real technological breakthrough in the world of mobile development.

[16] 2M is a Moroccan television service.
[17] Mehdi obtains a degree in Computer Science from the Sorbonne in 2004 + 2 masters from ESIAG and ESSEC

In 2015, just after 2 months of deployment, and without much marketing efforts, ScreenDy had already more than 2,500 registered users with an average of 300 users a day. **Their objective for 2016 was to reach 500,000-800,000 users**.

ScreenDy also received a **MIT EF Arab Award Start-up Track in 2015** and was selected by Harvard University to pitch at Harvard Arab Weekend as one of the 10 most innovative start-ups. Their biggest markets are **USA** (already mature mobile market), the **Middle East** (biggest potential for development) and **Morocco**, which also has a huge potential in this sector. ScreenDy's target customers are **freelancers** (estimated at 30 million people) who want to increase productivity to meet more customer demands as well as **large corporations**, and **governments** that are undergoing digital transformation, for example.

In parallel, Mehdi works is also a **mentor** and **coach** and encourages young Moroccan developers to bring out their ideas and turn them into a viable business. Because Moroccan entrepreneurs are deemed to be over-exigent towards themselves to succeed and produce the best product, when asked about the advice he usually gives to these young entrepreneurs, he always answers with this motivational statement: "No need to wait until the product is as good as that of Google to release it!".

Source: Excerpts translated from French. La Tribune (26 November, 2015) https://lnt.ma/portrait-mehdi-alaoui-ceo-de-screendy-un-visionnaire-de-classe-mondiale/

Adnane Remmal: Morocco

Once he obtained his PhD in molecular pharmacology in 1987, Dr. Remmal decided to return to Morocco and share his passion for research with his Moroccan students and participate in the scientific and technological development of his country. In 1988, Dr. Remmal became a professor and researcher at the University of Fez. It was later in 1994 that Dr. Remmal earned a second PhD in microbiology, resulting from his fundamental research on the antimicrobial activity of essential oils. It wasn't until 2004 that Dr. Remmal had founded a start-up company that brought his pharmaceutical and veterinary medicine applications to market. Over the years, Dr. Remmal had been refining his inventions, and his newest invention is "boosting antibiotics with essential oils". Stemming from the need to develop new ways of fighting antibiotic-resistant bacteria, which are a threat to global health, Dr. Remmal invented a new way to boost the efficacy of antibiotics used to treat bacterial infections, using plant-based materials.

Throughout the years, Dr. Remmal acknowledged the antimicrobial, antiparasitic and antifungal properties of certain plants, but also their side-effects, and went on to create his solution that builds upon "the inherent strengths of both antibiotics and natural essential oils, combining them to increase effectiveness beyond what either offered independently, while simultaneously avoiding any unpleasant side-effects".

In **2014**, Dr. Remmal **patented** his invention with the European Patent Office (**EPO**)[18] and is now expecting to launch the new drug, still in its final stages of clinical trials, in late 2017. This drug is part of a 2-leveled approach, one that uses "essential oils to help solve the problem of antimicrobial resistance' and the other, an additional invention, which is "a natural supplement made from natural essential oils that replaces antibiotics and other chemicals in animal feed".

In **2015**, Dr. Remmal was honored with the **Innovation Prize for Africa** (1st place, USD 100K prize), an award from the African Innovation Foundation, for his plant-extract-based feed supplement for livestock. Furthermore, earlier in June 2017, Dr. Remmal won the **2017 European Inventor of the Year** award. The award was presented by the EPO in Venice.

[18] Dr. Remmal's start-up, which he started in 2004, has filed for 4 patents so far.

Dr. Remmal, with his groundbreaking invention that offers a new way of combatting the growing resistance of bacteria to antibiotics and shows that traditional antibiotics and natural essential oils can be combined to boost their effects, has now joined the long list of European Inventor Award finalists and winners who took their inspiration from nature to develop innovative solutions.

Sources: European Patent Office (EPO). *Adnane Remmal (Morocco): Winner of the European Inventor Award 2017 in the Popular Prize category*. https://www.epo.org/learning-events/european-inventor/finalists/2017/remmal.html;
Le 360. *Le biologiste Adnane Remmal remporte le prix de l'inventeur européen à Venise* (Khalil Ibrahimi, 16 June, 2017, http://m.le360.ma/societe/le-biologiste-adnane-remmal-remporte-le-prix-de-linventeur-europeen-a-venise-123501)

Hayat Sindi: Saudi Arabia

Dr. Hayat Sindi is a Saudi Arabian scientist that has had an inspiring journey over the years. She is the founder and President of the Institute for Imagination and Ingenuity (**i2institute**), in Jeddah, Saudi Arabia, and a co-founder and director of **'Diagnostics for All',** founded in **2007, "**by a group of scientists and entrepreneurs with a shared commitment to saving lives and alleviating disease in developing countries and other resource-poor settings through low-cost, innovative, practical diagnostic devices".

- **1995** – Graduates from King's College, UK with a degree in pharmacology
- **2001** – Earns a PhD from Cambridge University, UK in biotechnology
- **2010** – Wins the 'Mekkah Al Mukaram' Prize for Scientific Innovation, given by HRH Prince Khalid Al-Faisal
- **2011** – Named an 'Emerging Explorer' by the National Geographic Society
- **2012** – Names one of Newsweek's '150 Women Who Shake the World'; Becomes UNESCO Goodwill Ambassador in 2012 "in recognition of her work to create an ecosystem of entrepreneurship and social innovation for scientists, technologists and engineers in the Middle East and beyond, [bringing] the youth closer to innovators and [her] dedication to the ideals and aims of the Organization."
- **2013** - Appointed as one of the first 30 women to the Shura Council[19] in Saudi Arabia; Selected as one of 25 global experts by United Nations (UN) Secretary-General Ban Ki Moon to be a member of the newly constituted UN Scientific Advisory Board[20]
- **2014** – Receives the Clinton Global Citizen Award for Leadership in Civil Society
- **2015** – Invited by the UN Environment programme to be an Honorary Advisor for the Eye on Earth Summit.
- **2016** - Appointed by the UN Secretary-General Ban Ki-moon in the Ten Members group to support the technological facilitation mechanism (TFM) for Sustainable Development Goals (SDGs).
- **Recently**, Dr. Sindi was asked by the Prime Minister of Malaysia to join his Science and Innovation advisory council to support the country's vision for 2020.

The impactful projects done at **Diagnostics for All** (DFA) include the following:

- **Liver Function** – liver enzyme diagnostic test that can provide an assessment of liver health from a single drop of blood in about 15 minutes, via a low-cost, patterned paper-based test
- **Small Farmer Support** – minimally-trained animal health technicians can accurately test for heat using a whole blood sample test

[19] The **Shura Council** is the highest consultative body in Saudi Arabia.
[20] The **UN Scientific Advisory Board** provide advice to the UN's leadership on science, technology and innovation for sustainable development.

- **Nucleic Acid Detection** - a nucleic acid amplification-based paper-microfluidic device for early infant diagnosis of HIV under a 'Saving Lives at Birth'[21] grant.
- **Child Nutrition** - combines low-cost patterned paper-based diagnostics with flexible electronics platform to accurately monitor micronutrient levels in rural settings at low cost
- **Immunity** - low-cost, rapid diagnostic to test for successful vaccination against tetanus and measles

Along with her scientific activities, Dr. Sindi participated in numerous events aimed at raising awareness about science amongst women, particularly in Saudi Arabia and the Muslim World.

Sources: UNESCO. *Scientific Advisory Board of the Secretary-General: Hayat Sindi*. https://en.unesco.org/un-sab/members/hayat-sindi;
World Economic Forum. *Hayat Sindi*. https://www.weforum.org/people/hayat-sindi; Diagnostics for All. *Projects*. http://dfa.org/

10.Case Studies

Lebanon

Overview of the Lebanese Situation

Population: 4.6 million **(2015)**

GDP: $51.2 billion **(2015)**

GDP per capita: $11,239 **(2015)**

SME contribution to GDP: 99% **(2014)**

World Bank Doing Business *Rating* (2015): 56/100; ***Rank:*** 126/190

World Bank Starting a Business *Rating* (2015): N/A; ***Rank:*** 139/190

World Economic Forum Global Competitiveness *Rating* (2015): 3.8/7; ***Rank:*** 101/138

Economic Development Phase: Efficiency-Driven

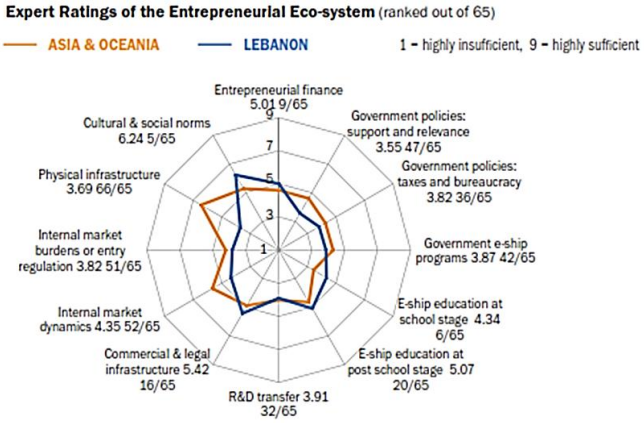


Figure 14: Global Entrepreneurship Monitor 2016-2017 profile for Lebanon

Access to Market and Ease of Doing Business

Regardless of the growing ecosystem surrounding entrepreneurs nowadays, according to Endeavor, there still remain key challenges that entrepreneurs are facing today such as the 1) high cost of failure, 2) lack of role models and mentors, 3) limited management expertise, 4) lack of trust and 5) limited access to smart capital (Endeavor, 2016).

The World Bank's Doing Business survey places Lebanon in the 133rd place, out of 190 countries (ranking adjusted for 2018). Multiple governmental, regulatory and infrastructural barriers are factors that contribute to Lebanon's low ranking in the Ease of Doing Business assessment. In comparison to other MENA countries, Lebanon (Rank 133) falls behind Egypt (Rank 128), Jordan (Rank 103) and Saudi Arabia (Rank 92).

[21] https://savinglivesatbirth.net/home

In regards to the indicator, Starting a Business, designated by the procedures, time, cost and paid-in minimum capital needed to start a limited liability company, the ranking is even lower for Lebanon, at the 143rd place. Even though Lebanon has made some business policy reforms in this field over the years, as documented by the World Bank's Doing Business surveys (2009 throughout 2016), there is much more effort to be made in order to push up Lebanon's ranking. To gain some perspective, a snapshot of some of the reforms that Lebanon has already established over the years is presented:

For example, in 2009, Lebanon made it easier to register a company by streamlining its business registration process, however, in 2011, went on to increase the cost of starting a business, which is a change that makes it more difficult to do business. So, this proves that there are some major discrepancies in the approach to doing business in the country that need to be addressed accordingly (World Bank, 2017f).

Notably, access to market was made a priority issue in Lebanon's 2014 SME Strategy by the Ministry of Economy and Trade. The strategy to improve access to markets "aims at minimizing structural market inefficiencies to improve SME competitiveness, and enhancing access to foreign markets and in particular to fast-growing economies and ones where Lebanon has an edge" (Ministry of Economy and Trade - UNDP, 2014).

Human Capital and Skills

There are multiple factors that have spurred a culture of entrepreneurship in Lebanon, even one that dates back to the Phoenicians – Lebanon as a center for trade and commerce. The Lebanese Civil War has, in itself, brought forth an entrepreneurial spirit in the country, resulting from all the efforts that were put in place at the time to redress the country's national economy.

In regards to female entrepreneurs, female engagement in SMEs has been low in Lebanon and, not to mention, a low participation of women in high leadership positions in those enterprises. Much of this stems from the overarching patriarchal culture that still exists in the country, coupled with an ecosystem and supportive environment that, even though has been growing in the last few years, still remains not up to par for women in comparison to those in European countries for instance.

Even so, in Lebanon, there have been many efforts made to combat this and promote gender-inclusivity in the Entrepreneurial ecosystem, just like BLC Bank's Women Empowerment (WE) Initiative for instance, which is a platform that connects women together through forums and discussions. The platform includes the SME Toolkit that is designed for start-ups and entrepreneurs. Other examples include the Cartier Women's Initiative Awards and the Femme Francophone Entrepreneure competition, organized by AUF, Berytech, L'Orient Le Jour and Commerce du Levant. Such competitions and awards target and support (financial and business) female entrepreneurs and their ventures.

Further training institutes promoting and developing human capital and skills include Torch, Amideast, Bootcamp at AltCity, TeensWhoCode, Le Wagon, and SE Factory.

SDG Box 1: Entrepreneurial ecosystem support entity addressing SDG 5 on Gender Equality

Case Study: The Blessing Foundation

The Blessing Foundation is a leading empowerment foundation for women entrepreneurs in Lebanon. The online platform is "the home of each woman entrepreneur to advertise and relate with other women entrepreneurs" (The Blessing Foundation, 2017).

The Foundation's **main mission** is to:
1. Connect and promote women entrepreneurs in Lebanon and the MENA area
2. Create access and opportunities in underserved communities – creating community impact,

fostering institutional transformation, and promoting environmental growth

- ☑ The Foundation works towards providing the following services for women entrepreneurs:
  - Coaching
  - Mentoring
  - Networking
  - Scaling-up
- ☑ To date, their network consists of 200+ women.
- ☑ Since 2012, the Foundation has created 150+ successful mentoring relationships, many of which have resulted in long-lasting partnerships among the women involved.
- ☑ 31 women from their network have participated in international events and have amassed a wide international network – many have been put in contact with the likes of Forbes and Goldman Sachs.

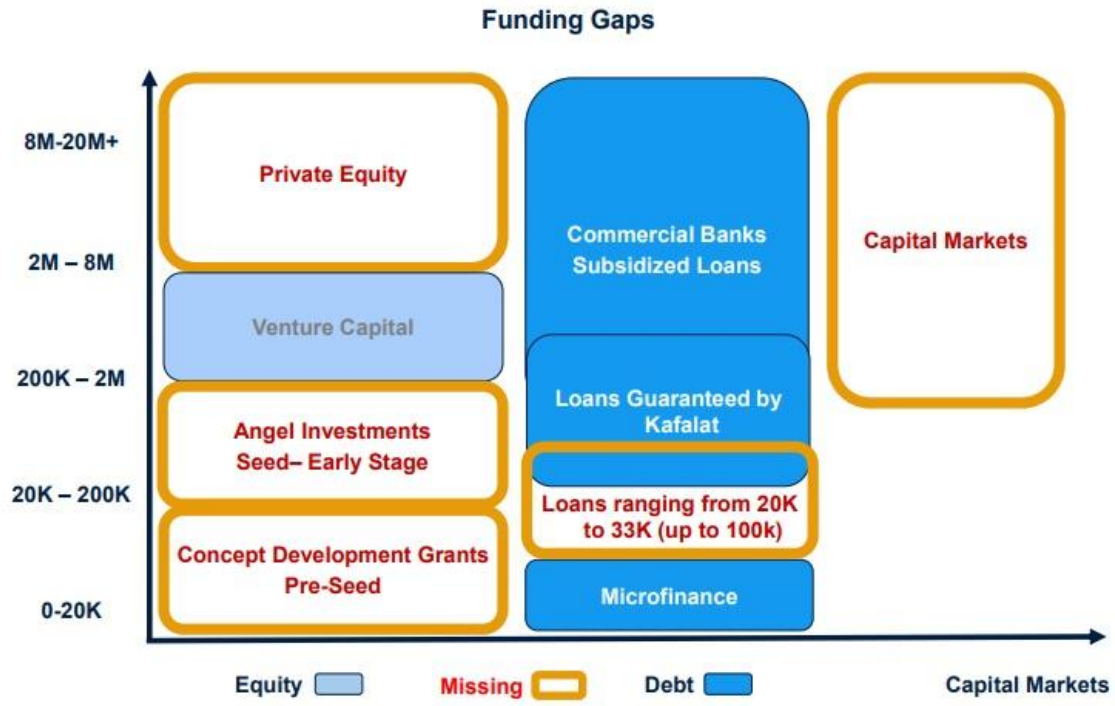
Their Recommendations:

- To place SDG 5 at the center of all CSR activities
- To partner more with academia
- To highlight women's businesses by promoting their products and services online through their **e-commerce website**: https://www.shoptbfonline.com/

Funding and Finance

One of the major and most recurring challenges that face entrepreneurs in Lebanon is the lack of pre-seed and seed funding. There is a missing middle ground that should fill in the gap before reaching Venture Capital Investment, which has become much more widespread (10+ VCs in Lebanon alone), as opposed to Angel Investments (Bader's Lebanon Business Angels and most recently Seeders Master Class for Business Angels) or Crowdfunding platforms (only Zoomaal for the entire MENA region).

Also, there are huge gaps in ticket sizes, as seen in Figure 15, since there are limited funding opportunities for investments less than 200K USD - above which become Venture Capital Investments and Private Equity, which for emerging start-ups, that are just getting their businesses going and have not yet reached a Minimum Viable Product (MVP), is a major barrier for them to access funding.



Source: World Bank Analysis

Figure 15: Illustrative graph indicating the funding gaps in access to finance for entrepreneurs (World Bank, 2017c)

However, the financial ecosystem is growing. When it comes to investments, in 2016, Lebanon ranked 7th among Arab countries on the ease of access to venture capital sub-index (WEF/INSEAD/Cornell University, 2016). Its improvement on this sub-index was 15% between 2014 and 2016 moving from rank 62 to rank 42 globally among 139 countries. By 2016, around 12 funding institutions were available that focus on start-ups in the digital, financial, agricultural, food, health and e-government services (**Figure 16**).

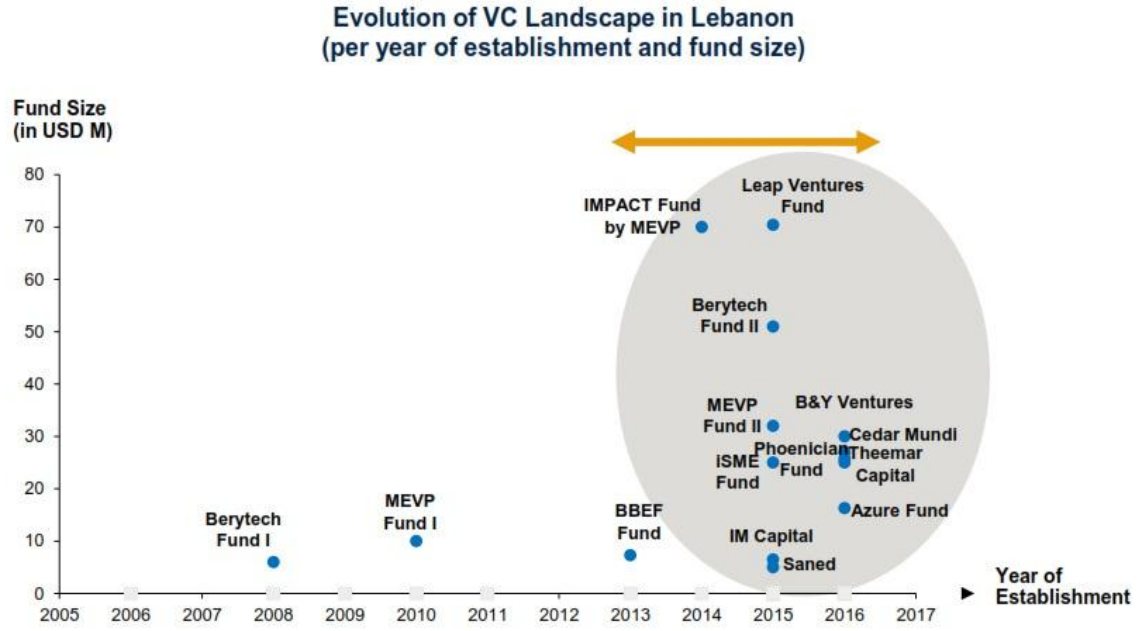


Figure does not include funds that stopped operating: BBF Fund in 2006 and Lebanon Growth Capital Fund in 2011. It also does not include Angel Funding: LBA - Business Angels in 2009, Seeders in 2016. It does not include funding made available by accelerators such as SPEED.
Source: Funds Websites, World Bank analysis

Figure 16: Evolution of the venture capital landscape in Lebanon (World Bank, 2017c)

BDL: Circular 331

One cannot talk about the entrepreneurial ecosystem in Lebanon without paying tribute to the country's Central Bank - Banque du Liban (BDL). BDL is the main actor governing the financial ecosystem and provides businesses and SMEs with the necessary access to finance. In this respect, the most important law issued by BDL is the Circular 331 and its amendments.

Circular 331, hailed by many as the driving force of the Lebanese entrepreneurial ecosystem, was issued in August 2013, with the objective of engaging Lebanon in the Knowledge Economy (KE), boosting start-ups and entrepreneurship and creating the right ecosystem to sustain their activities. Since BDL cannot intervene directly on this level, its policy is channeled through the Lebanese banking system.

Prior to 2016, the total participation of any bank in start-ups could not exceed 3% of the bank's capital, provided the participation of any bank in a single start-up does not exceed 10% of the aforementioned 3%. Thus, commercial banks must invest in at least 10 start-ups if they wish to benefit from all the facilities provided to them by BDL – implying the equivalent of up to $400 million to be injected in this sector in the coming seven years. However, after Amendment 419 was issued in April 2016, this figure was revised to 4%, increasing the potential investment to $600 million (Wamda, 2017a). Banks wishing to finance such companies will benefit from interest-free loans from BDL guaranteeing up to 75% of banks' investment for a maximum period of seven years. This means that if a start-up should go bankrupt, BDL will reimburse the bank that financed said start-up up to 75% of its investment, while BDL covers the remaining 25% (as loss). Another structural requirement of Circular 331 is that banks can own up to 80% of the company's capital (not exceeding 80%) for the entire duration of the loan. The company should be a Lebanese joint stock company with nominal shares. The bank should liquidate all the shares it owns by the end of the maximum loan period (7 years).

BDL's Impact on the Entrepreneurial Ecosystem

To date, $300-$320 million have been raised with around half this amount invested in over 40 start-ups. This surge of money has "spurred the creation of new venture capital funds which cover the various levels of funding (seed, growth, and series B), new accelerators, and new co-working spaces" – support mechanisms that have been highly conducive for the establishment of innovative start-ups in the country.

Circular 331's Pitfalls

Just as there are key players of the Lebanese entrepreneurial ecosystem that have hailed Circular 331 as a game-changer in its pursuit towards a Knowledge Economy, there are many who have flagged some of the Circular's drawbacks and limitations. The most recurrent drawback that faced Circular 331 originated as a result of the February 2017 Intermediate Circular 452, which raised a number of complaints namely among start-ups. BDL's Intermediate Circular 452 puts limitations on how start-ups could invest the money that they receive under Circular 331, thus "stipulating that any investment, direct or indirect, must be made in Lebanon" (Wamda, 2017b).

With this, Circular 452 endangers Circular 331 given that it forbids any expense from outside Lebanon, without making a clear distinction between what an investment is and what an expense is (i.e. it does not differentiate between spending and investment). Even if BDL reported that expenses outside the country are allowed, as long as they are in line with the spirit of Circular 331 – which is essentially to create employment in the Lebanese Knowledge Economy, this is still problematic for start-ups who now have to "ask permission" from BDL before "spending anything abroad" (Wamda, 2017b).

Therefore, in March 2017, following much resistance and lobbying from the entrepreneurial ecosystem, Circular 452 was amended - Amendment 454 – to permit start-ups to "buy services and equipment abroad should they be unavailable in Lebanon. Additionally, it allows that further exceptions can be granted by BDL on a case-by-case basis" (Wamda, 2017b). The amendment was a step forward in comparison to 452 yet is still met with some skepticism.

Network and Support Systems

An enabling environment supporting the private sector had started to grow in the early 1990s with numerous government efforts such as "the enactment of new laws (National Investment Law of 2001), improvements in administrative setups (Establishment of the Investment Development Authority of Lebanon (IDAL) in 1994 to encourage large investments in the country), the reactivation of the Beirut Stock Exchange in 1996 and the launch of economic zones" (Ministry of Economy and Trade - UNDP, 2014).

Further efforts in the early 2000s brought forth another wave of initiatives that placed certain industries in the spotlight via the provision of long-term subsidized loans. Banque du Liban (BDL), Kafalat, Lebanese banks and foreign development agencies, such as the European Investment Bank, have all played key roles highlighting the need to support entrepreneurship (via support to SMEs) and have contributed to shaping Lebanon's entrepreneurship culture today.

Since 2005, the entrepreneurship scene had started to expand in the country with the introduction of new active players, mainly from the private sector and NGO side. Initiatives such as accelerators, incubators, venture capitals, and other supportive entities and mechanisms has all started to emerge and played a crucial role in funding, supporting and developing Entrepreneurs.

Government and Regulatory Framework

Key components of entrepreneurship in Lebanon are most definitely the multiple **government agencies, legislation and regulations** put in place to govern the ecosystem on an institutional level.

Box 2: Governmental and legal challenges facing the Lebanese entrepreneurial ecosystem

Governmental Challenge: Internal Difficulties/Lack of Coordination among Government Agencies. It has been well documented over the years that governance in Lebanon is significantly lacking, as is highlighted by the state's failure to implement its own policy provisions not to mention failures in enforcing the rule of law and regulation and the lack of cooperation between the government's own legal entities (BRIC, 2016).

Legal Challenge: Incorporating a start-up has numerous benefits especially if entrepreneurs want to be professional and set up a name and presence for themselves in the scene. It is recommended for start-ups to be established as an **S.A.L** (Société Anonyme Libanaise) - a joint stock company whereby the shareholders' liability is limited to the amount of their capital contributions. This, in itself, is a double-edged sword, posing as a barrier for many start-ups as they are required to need at least 20K USD in capital paid into a bank account to incorporate; and given the difficulties in landing ticket sizes at this level (access to finance gaps), this becomes problematic for some budding start-ups. Moreover, to benefit from BDL's Circular 331 funding, the start-up must be incorporated. Therefore, there are indeed bureaucratic barriers to Entrepreneurs at the legal level in this sense (Startup Megaphone, 2016).

Update on the Public Sector (2017): Ministry of Economy and Trade (MoET)

The MoET has developed a **SME Development Learning Library** that helps Entrepreneurs grow their business and develop their skills. There is a number of courses that Entrepreneurs can register for on the platform, such as:

- Leadership Essentials
- Effective Communication Skills
- Project Management Essentials
- Customer Service
- Social Media for Business
- Business Model Innovation
- Planning and Time Management

Link to the platform: https://courses.potential.com/competitions/sme-evolution/

(Ministry of Economy and Trade, 2017)

Additionally, as part of the Lebanese SME Forum 2017, Berytech and the MoET signed a MoU initiating collaboration between the two institutions for the implementation of a national strategy for SMEs in Lebanon. The aim of this collaboration is to "enhance synergies between constituents of the SME environment in Lebanon in order to forge a better business environment" (Berytech, 2017c). This is a good example of how Lebanon is working towards the SDGs through entrepreneurship. Such a strategy is thus highly development-oriented as it will serve to promote entrepreneurship, job creation, and economic growth by forging a better business environment for SMEs in the country. This is therefore reflective of **SDG 8.3** which is to *"provide development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization of micro, small-and-medium-sized enterprises, including through access to financial services"* (UN General Assembly, 2015).

School and university is important milestones in an entrepreneur's life and many programs, centers, and mechanisms have been put in place to support entrepreneurs. Furthermore, programs targeting youth employment (job-seekers) also exist, contributing to building youth's life-and soft-skills and experience in a working environment, both of which are formative for entrepreneurs.

At the **school-level**, INJAZ Al-Arab and notably, **INJAZ-Lebanon** are working towards promoting youth experiential learning in workforce readiness, financial literacy and entrepreneurship in the Arab region.

Programs such as INJAZ Lebanon are an example of mechanisms that have been put in place that effectively work towards achieving the SDG 4 on education. Given that the multiple programs within INJAZ Lebanon are all geared towards building skills that are relevant for entrepreneurship among youth - problem-solving, critical thinking, self-confidence, business and economics, business planning, marketing and social networking – INJAZ Lebanon is thus adhering to **SDG 4.4** in specific, which is to *substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship by 2030* (UN General Assembly, 2015).

Entrepreneurship education and training programs, much like INJAZ Al-Arab, are also in line with SDG 8 related to economic development, particularly **SDG 8.6**, which is to *substantially reduce the proportion of youth not in employment, education or training*, as such types of education and training do in fact contribute to reducing the number of youth that are 1) Out of Employment – by bridging the gap between youth skills and job market requirements – 2) Out of Education – by targeting school-age youth, and 3) Out of Training – by targeting potential and practicing Entrepreneurs (UN General Assembly, 2015).

At the **university-level**, top institutions such as AUB's Center for Research and Innovation (CRInn) (see **SDG Box 2**), AUB CRInn Riyada (see **SDG Box 3**), LAU Institute of Family and Entrepreneurial Business, BAU's Center for Entrepreneurship (academic incubator), and ESA Business School are creating much support for entrepreneurs in Lebanon.

Furthermore, at the **workplace-level**, The World Bank launched, in 2011 in coordination with the Ministry of Labor, the **New Entrants to Work (NEW) program**. This program is under the 2nd Emergency Social Protection Implementation Support Project (ESPISP II). The NEW program aims at improving the employability of Lebanese first-time job seekers and offers participants an integrated program of life skills training (50-hours), intermediation (placement) and monitoring services combined with 2 years on-the-job training (OJT) in a private firm.

Sources: (AUB, 2017)**;** (CNRS-L, 2017)**;** (INJAZ Al-Arab, 2013)**;** (INJAZ Lebanon, 2016)**;** (LAU, 2017)**;** (World Bank, 2016); (ESA, 2017)

SDG Box 2: Academia as key actor in entrepreneurial ecosystem addressing SDG 4 and SDG 9

Focus: AUB's Center for Research and Innovation (CRInn)

In February 2015, the Office of Grants and Contracts (OGC) and the Technology Transfer Unit (TTU) at AUB launched the Center for Research and Innovation (CRInn). Its aim is to "establish a hub for emerging creative, promising and innovative entrepreneurial AUB students, staff and faculty members" (AUB, 2017a).

The services provided by CRInn are as follows (AUB, 2017b):

- Training programs
- Mentoring/coaching sessions
- Specialized workshops/events

- Media exposure in addition to providing opportunities for networking and collaborative work to address critical contemporary challenges
- Connecting start-ups with potential clients and investors
- Assisting start-ups by providing them with a business incubator and co-working space to use throughout their pre-launching stage
- Providing meeting rooms, event spaces and a conference room
- Supplying start-ups with needed administrative support, utilities, furniture and technical support including 3D printer, internet hosting services using in-house servers, high-speed internet and maintenance services

SDG Box 3: Innovative initiatives addressing SDG 4 on Education

1. **Fransabank**:

As part of its CSR commitments, Fransabank has established 3 initiatives with the 1) General Secretariat of Catholic Schools, 2) USJ and 3) LAU to support education by offering grants and prizes to school and university students. Cash prizes valued at 27,000 USD were awarded to 21 students, selected out of 180 participants in Fransabank's **educational competition** called **"Talents for Lebanon".** The competition's subjects were on Dictation in Arabic, English, and French, Mathematics, Physics, and Biology (Fransabank, 2017).

2. **AUB TAMAM Lebanon Hub**:

AUB launched in 2015 **Lebanon's first educational reform** hub called the **TAMAM Lebanon Hub (TLH).** TAMAM, which in Arabic refers to ***al-Tatweer Al-Mustanid ila Al-Madrasa*** **- التطوير المستند الى المدرسة,** is "an initiative that combines research with development to trigger and support school-based initiatives for sustainable school improvement. The initiative was formed based on an agreement with the Arab Thought Foundation (ATF) in 2007 to build the capacities of teachers and school administrators to initiate school-based improvement to improve students' learning within the particular culture of the Arab region" (AUB, 2015).

3. **AUB-CRInn – Riyada**

This initiative was launched by AUB's Center for Research and Innovation (CRInn). **Riyada** offers an educational program that promotes social entrepreneurship among youth aged 15-24 in Lebanon. Riyada consists of:

- **Seasonal Camps – Youth Innovation Summer Program 15+**
  - This is a youth innovation program that is taking place for 2 weeks in July 2017 and is targeted towards beginner youth, aged 15+, interested in social entrepreneurship.
  - Participants of the program will focus on social entrepreneurship in a project-based, hands-on context, whereby "they will be developing a mobile application to solve a real social problem related to one of the 2030 Sustainable Development Goals" (Riyada, 2017).
- Online Courses
- Hackathons
- Consulting for SMEs – how to increase the social impact of their business
- Free mentorship for young entrepreneurs
- Workshops

Partners:

- Bamboo Geeks
- Little Engineer

Measuring Entrepreneurship and Innovation in Lebanon: 2017 Global Innovation Index (GII)

Lebanon's overall GII ranking has decreased from 2016 (70/128) to 2017 (down to 81/127). Even though there are improvements, there are still components of innovation in the country that remain to be addressed. Below are Lebanon's strengths and weaknesses.

- **Weaknesses - What Changed?**

Even if it remains a weakness, the Sub-pillar under Innovation Linkages – **University/Industry Research Collaboration – has significantly improved as compared from 2016 (ranked at 108/127) to 2017 (ranked at 48/127).** This is a step forward in the right direction as collaboration between universities and industries is crucial to Knowledge and Technology Transfer (KTT) as evidences by its impact on the economic development of the country, given that it fosters innovation and thereby raises productivity, creates better job opportunities, and addresses societal challenges.

- **Strengths – What Changed?**

Improvements have been made in regards to Lebanon's top strengths – **Tertiary Education** – which is a good sign. However, even though they remain strengths, Lebanon has regressed in some of those strengths, such as with Venture Capital Deals (Billion PPP$ GDP), ICT Services (export/import) as well as Foreign Domestic Investments (FDI, input/output). A major regression is reported concerning Lebanon's Cultural and Creative Services export (% of total trade), which back in 2015 was much more prominent (ranked 8/127) than it is this year 2017 (ranked 44/127).

- **What Remained the Same?**

The common factor that seems to be recurring is the fact that **Lebanon's Political Stability and Safety (ranked 122/127) is so low** in comparison to other countries; this is a major barrier to the country's progress and strong policies must be put in place to address this.
Moreover, there are Sub-pillars which have **No Available Data**, most of which have remained as such comparing to 2016. Significant data such as number of researchers, expenditure on R&D, research talent – especially that among women - and how much intellectual property is being generated, from patents to utility models to industrial designs and the further mismatch between the underperformance of the R&D system and the potential of Lebanese creativity as implied by the above GII 2017 set of indicators still remains unavailable, and is a strong argument in favor of enhancing the knowledge productivity in Lebanon.

Success Stories: Lebanese Entrepreneurs Meeting SDGs

Innovation and technology plays the role of facilitator and promoter in supporting entrepreneurs and start-ups that respond to SDGs. The availability of key actors in the EE is a deciding factor for the promotion of start-ups that have, at their core, objectives that meet SDGs. This includes entrepreneurs that are actively working towards the promotion of products and services that are SDG-oriented. Below are 2 success stories of Lebanese entrepreneurs whose start-ups are geared towards achieving the 2030 SDGs.

Antoine Skayem - RIEGO/FREE SAL

SDG Box 4: Role of entrepreneurship, innovation and technology in addressing SDG 2, 6 and 9

Working towards the SDGs: RIEGO

Riego is a prime example of the role that entrepreneurship, innovation and technology, via the establishment of targeted accelerator programs, plays on the promotion of start-ups that are geared towards achieving SDGs.

The uniqueness of this product is attributed to its "ability to dynamically change the irrigation schedule, based not only on the weather and soil parameters but also on the plant needs, through a set of sensors and a smart algorithm" (Berytech, 2016). Furthermore, Riego also offers an online social platform that allows users to interact, exchange and share information.

What is important to mention here is that Riego is not only fulfilling SDG 2 through their products, but also other cross-cutting SDGs:

- ☑ The idea for Riego initially stemmed out as a result of the drought that hit Lebanon back in 2013 which damaged 60% of the country's agricultural production yield, and thus Riego ultimately set out to address this issue and find a viable and proactive solution to reduce water consumption. This drive was therefore in line with **SDG 6: Ensuring availability and sustainable management of water and sanitation for all**, particularly:
  - **SDG 6.4** – By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
  - **SDG 6.5** – By 2030, implement integrated water resource management at all levels.
- ☑ Riego is promoting the use of new technologies (ICT) to address the issue of sustainable resource management in the country. With this, the company is adhering to **SDG 9: Building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation,** particularly:
  - **SDG 9.4** – By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capacities.

(UN General Assembly, 2015)

Abdallah Absi – ZOOMAAL & GIVINGLOOP

SDG Box 5: Role of entrepreneurship, innovation and technology in addressing SDG 17

Working towards the SDGs

Abdallah's vision for Zoomaal first stemmed out spontaneously out of a need that he had, based on his own experiences starting out and the challenges he went through, to find a way to support similar entrepreneurs in their journey and help get their projects off the ground. He wanted to provide these entrepreneurs with access to financing that they could not have been able to access elsewhere – given the nature of their ideas and projects that would not have been absorbed most likely through other support mechanisms with more rigid models (VCs, accelerators, incubators, etc.).

With **GivingLoop**, the process was more structured. Currently based out of San Francisco, GivingLoop, a crowdfunding platform directed towards non-profits and social enterprises to achieve greater impact in the Arab world and internationally, is now on a more global scale than Zoomaal when it had first started, incorporating a model that is both profit-generating and socially impactful.

With this, Zoomaal and GivingLoop both tie to **SDG 17.3** to mobilize additional financial resources for developing countries from multiple sources – and this source is from crowdfunding.

Morocco

A holistic case study of the entrepreneurial ecosystem of Morocco will provide a better understanding of the state of entrepreneurship in the region as a whole. The analysis of the ecosystem will emphasize innovative technology ventures that fulfill the 2030 Agenda for Sustainable Development. Although there is room for improvements in the ecosystem's support mechanisms, the country's net trends in fostering an entrepreneurial environment have been positive in recent years. Competitiveness, for instance, is a significant factor in drawing entrepreneurial engagement. On WEF's Global Competitiveness Index,[22] Morocco ranked 70 out of 138 countries in 2016, and it has had a net competitiveness increase of 1.7% since 2007, at which point it had a value of 4.08 out of 7, relative to the 2016 value of 4.20[23].

Another index to consider regarding Morocco's advancement towards entrepreneurial openness is the Global Innovation Index (GII). Innovation and entrepreneurship are inherently interrelated[24], and Morocco has had a net increase in its GII since 2013, having improved from a score of 30.9% in 2013 to 32.7% in 2017.[25] Moreover, Morocco is one of only two Arab countries for which the GII ranking has not decreased between 2011 and 2016[26].

Government and Regulatory Framework

Public agencies have authority over a significant portion of the start-up process, and the ease, efficiency, and cost of many government procedures plays a pivotal role in encouraging entrepreneurship. These processes include government documentation for business ownership, obtaining construction permits, obtaining electricity, property registration processes, obtaining credit from public sources, business tax percentages and procedures, and cross-border trading procedures.[27] In regards to fostering entrepreneurship in the country, the **National Agency for the Promotion of Small and Medium-sized Enterprises** (ANPME) or **Morocco SMEs (MarocPME in French)**, under the Ministry of Industry, Investment, Trade and Digital Economy, "is at the heart of the system for supporting Moroccan companies and represents the main operational instrument of public authorities for development of SMEs" (MCINET, 2017).

Government Support to SMEs

Morocco's **2014-2020 Industrial Acceleration Plan** set forth by the Ministry of Industry, Investment, Trade and Digital Economy consists of 10 measures to promote industrial transformation,[28] one of which is to support the transition from an informal to a formal economy.

[22] WEF Global Competitiveness Report, 2016, p. 4
[23] WEF Global Competitiveness Index dataset, 2016
[24] OECD Oslo Manual, 2005, p. 39
[25] Cornell and others (2017). *Global Innovation Index: Morocco*.
[26] Innovation Landscape Arab Region ESCWA p. 9
[27] http://www.doingbusiness.org/reports/global-reports/doing-business-2017 p. 1
[28] http://www.mcinet.gov.ma/~mcinetgov/en/content/industrial-acceleration-plan

10 Measures to Accelerate Industrial Transformation

1. Creation and Animation of Ecosystem
2. Industrial Compensation
3. **Transition from Informal Businesses to Formal Industries --** This transition scheme includes plans for entrepreneurship training, the establishment of a legal entrepreneur status, as well as financing structures.[29]
4. Qualification of Human Resources
5. **Improving SMEs' Competitiveness –** integrate support for:
    a. Investment
    b. Productivity
    c. Quality
    d. Computerization
    e. Innovation, research tax credit
    f. Access to markets
    g. Access to financing
    h. Guarantee system
6. Financial Intervention Tools
7. Infrastructure Available for Rent
8. Integration of the Kingdom on the International Level
9. Developing a "Deal Making" Culture for FDI
10. Enhance our African Vocation

One of the structures to implement the Industrial Acceleration Plan is **MarocPME**, which includes a number of options for aspiring entrepreneurs[30]. The 2015-2020 MarocPME roadmap is available through 5 programs targeting 5 business segments: 1) self-entrepreneurs, 2) ecosystem business partners, 3) SMEs, 4) small businesses and 5) companies with high growth potential. Therefore, MarocPME's areas of intervention include: entrepreneurship, growth and competitiveness.

As shown in Figure 17, the MENA region has room to grow in these areas. Morocco, however, has shown surprising growth and openness in many of these processes relative to the region. The World Bank Group has ranked these metrics on a global scale, and analyzing Morocco's relative position will demonstrate areas of growth as well as potential for improvement.

[29] http://www.mcinet.gov.ma/~mcinetgov/en/content/industrial-acceleration-plan?view=strategiques&tab=3
[30] http://candidature.marocpme.ma/

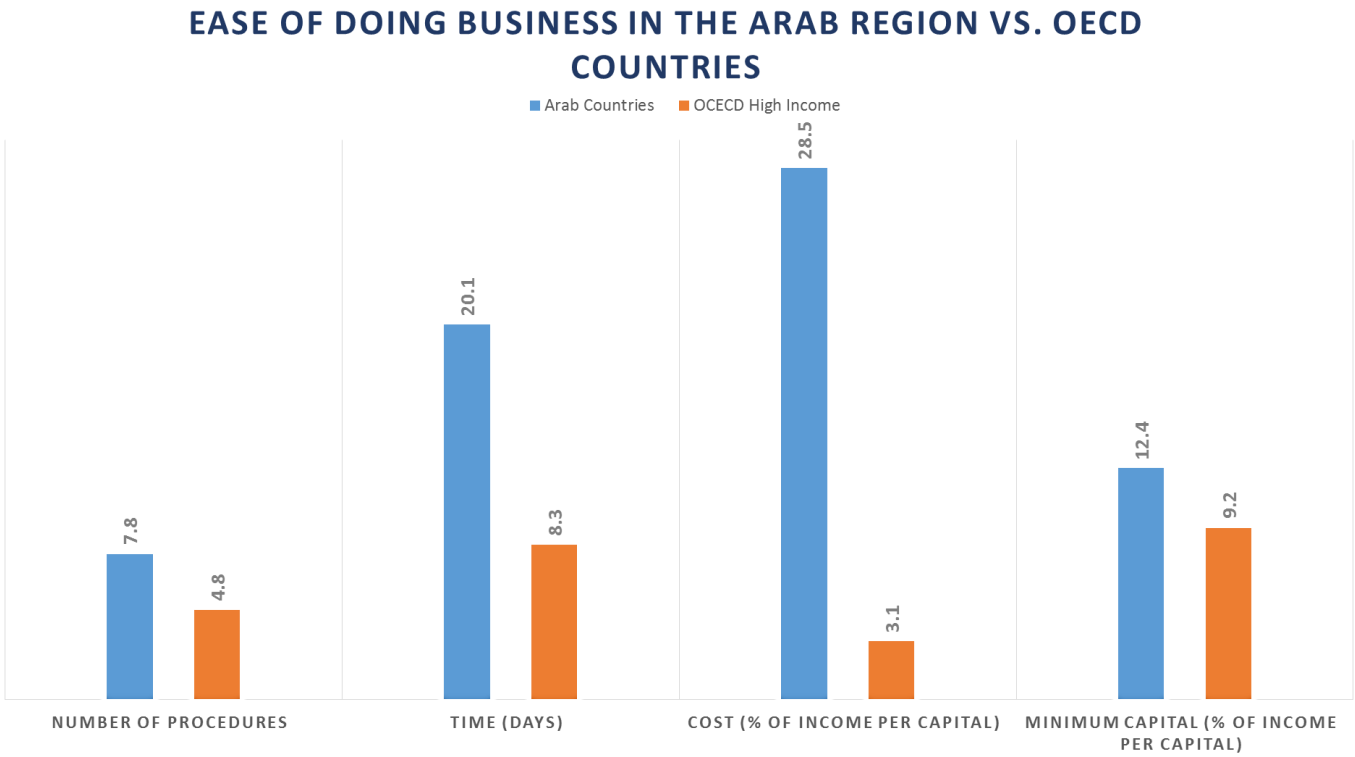


Figure 17: Ease of doing business in the Arab region vs. OECD countries
Compiled by ESCWA based on data from World Bank's Doing Business 2017 MENA Regional Profile.
http://www.doingbusiness.org/reports/~/media/WBG/DoingBusiness/Documents/Profiles/Regional/DB2017/MENA.pdf
* Includes all ESCWA member countries except Mauritania and the Sudan.

Morocco ranks 4th in the Arab region in overall ease of doing business;[31] an interesting benchmark given that it is a higher rank than several oil exporting countries in the region. In the same survey, Morocco scored 67.5% relative to the Arab region's average of 54.55%.[32] All of these factors are explicitly related to the effectiveness of public policies in encouraging openness to business in some sense, which, in turn, promotes an entrepreneurial environment. For example, to import goods into Morocco requires an average of 106 hours for border compliance time.[33] This process has been significantly improved since the introduction of a "single window system" for border control. Similarly, in another attempt to increase trade openness in the region, Morocco rejoined the African Union early in 2017 after having been absent since 1984.[34] This signals an attempt by Morocco to decentralize its reliance on Europe, and focus more on business with its continental neighbors.[35] These policies are thus aiding in the fulfillment of SDGs 10 and 17.

[31] http://www.doingbusiness.org/reports/~/media/WBG/DoingBusiness/Documents/Profiles/Regional/DB2017/Arab-World.pdf p. 7
[32] http://www.doingbusiness.org/reports/~/media/WBG/DoingBusiness/Documents/Profiles/Regional/DB2017/Arab-World.pdf p. 7
[33] http://www.doingbusiness.org/reports/~/media/WBG/DoingBusiness/Documents/Profiles/Regional/DB2017/Arab-World.pdf p. 181
[34] https://www.theguardian.com/global-development/2017/jan/31/morocco-rejoins-african-union-after-more-than-30-years. Accessed 10 August 2017.
[35] http://www.ey.com/Publication/vwLUAssets/ey-attractiveness-program-africa-2017-connectivity-redefined/$FILE/ey-attractiveness-program-africa-2017-connectivity-redefined.pdf p. 21.

Funding and Finance

Funding mechanisms that support entrepreneurs are crucial to a successful ecosystem. Morocco has several public and private funding options available to entrepreneurs. A recent study on climate friendly entrepreneurship ventures in Morocco reveals a good deal about the strengths and weaknesses of the funding mechanisms. According to a 2016 survey, 77% of Moroccan entrepreneurs in the climate domain received the most financial support from family and friends[36]. Globally among start-ups, obtaining funds from a private social network is not uncommon, but in Morocco, the presence of other funding sources is severely lacking, as shown in **Figure 18**.

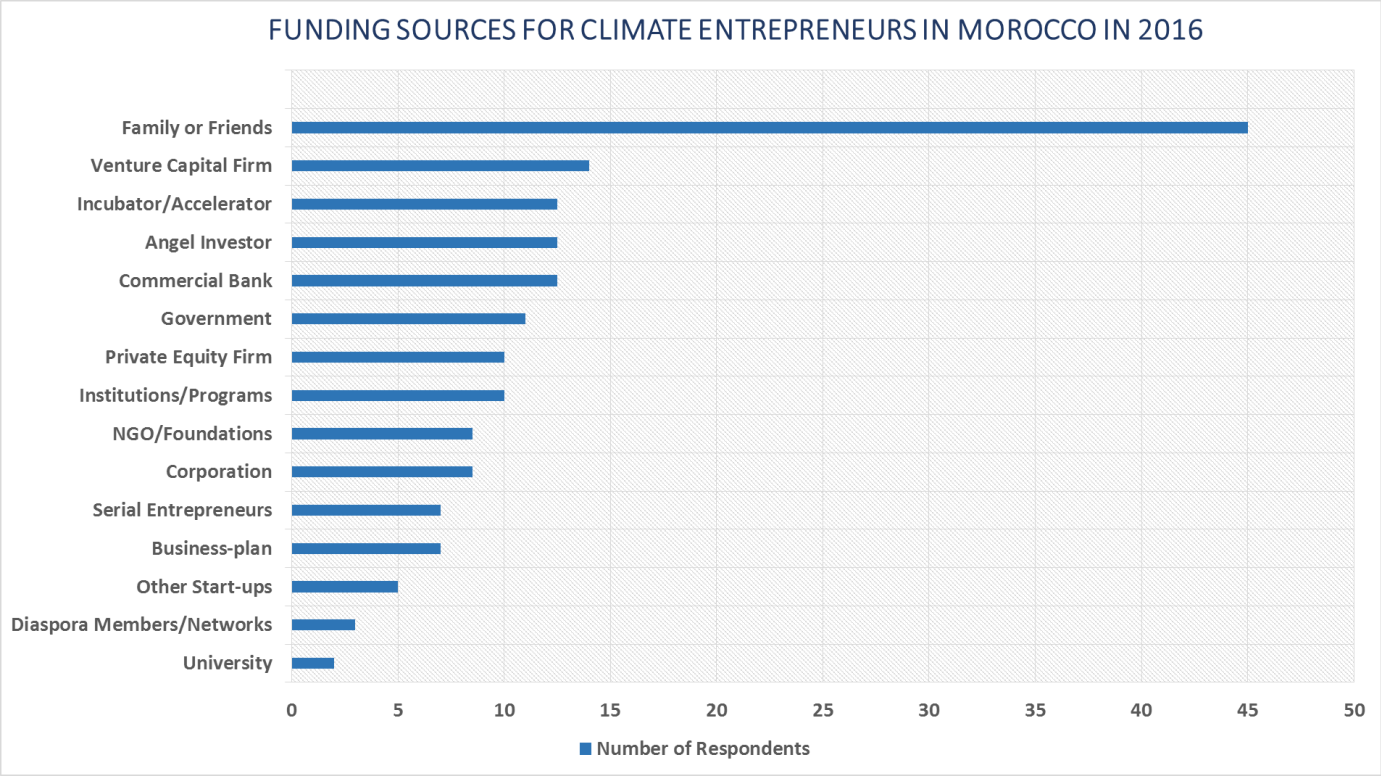


Figure 18: Funding sources for climate entrepreneurs in Morocco (2016)

Source: http://www.infodev.org/infodev-files/igniting_climate_entrepreneurship_in_morocco.pdf p. 56

The survey also reported that 38% of entrepreneurs lacked funding for later-stage support, from sources such as venture capitalists, investors, or loans. Access to finance has been a significant inhibitor to business growth in several Arab countries, and it "has been the result of many factors, including a weak financial infrastructure, weak competition in the banking sector, regulatory tolerance toward large exposures and connected lending, and the lack of nonbanking institutions and markets providing alternative sources of finance."

In this respect, Morocco is no exception. One of the aforementioned indicators from World Bank's Doing Business study is Getting Credit. In 2018, Morocco ranked 105th out of 190 countries measured by this metric, indicating an inhibitor to business growth (World Bank, 2017g) . Most surveyed Moroccan green entrepreneurs also clarified that part of the reason for the lack of funds was the significant tendency of investors towards risk-aversion.

Under MarocPME, if an SME or VSE would like to grow and it meets certain annual financial turnover brackets, they are eligible for consideration for an investment plan. Targeted projects fall into one of three categories. The first involves expansion or diversification projects, including product

[36] http://www.infodev.org/infodev-files/igniting_climate_entrepreneurship_in_morocco.pdf p. 56

transformation with high industrial added value and job creation. The second is a seed or subsidiary project that adds high value to an industrial sector that is deemed strategic by the state, and the third is total or partial company acquisitions which meet certain ownership constraints. Accepted applicants can expect an investment premium that amounts to a certain percentage of their needs for growth, as well as other beneficial options such as loans or leases. The **IMTIAZ program**, for instance, will credit certain companies with a maximum 20% of their growth requirements, with a cap at MAD 5 million (equivalent to around USD 520,000).

Bank loans are also an option for aspiring entrepreneurs. Banks, however, must have these funds intentionally delegated for such high risk investments. A 2011 World Bank study notes that "only 8% of bank loans in the MENA region have been allocated to SMEs, ranging from 2% in the Gulf States to 13% in the rest of the region, with Morocco, Lebanon, and Tunisia as the top performers".

Access to Finance: Venture Capitals

As mentioned above, the financial sector in Morocco is not yet fully up to par with providing entrepreneurs and start-ups with adequate access to finance. Venture capital which would be advantageous for upcoming start-ups remains underdeveloped in the country.
In a report conducted by the Moroccan Association of Equity Investors (AMIC), in 2015, "businesses requiring seed money and venture capital were the recipients of a mere 6% of all investments made in Morocco, one of the lowest rates of this sort of investment in the Middle East and North Africa region" (Akeel, 2017).

In order to address this issue, the Government of Morocco established the **Innov Invest Fund** in 2016 to "leverage USD 50 million in financing from the World Bank Group to plug gaps in equity financing for start-ups". The financing program is implemented by the Caisse Centrale de Garantie (CCG), which provides pre-seed, seed, and venture capital to innovative young firms. Moreover, the Fund will support "training, incubators, and acceleration activities for project developers, both through intermediaries in the financial ecosystem and through strengthening an angel investors' network". Another notable venture capital in the Moroccan financial scene is the **Maroc Numeric Fund (MNF).**

Once considered the only venture capital fund that invested in early-stage technology start-ups in Morocco, the MNF was created in 2010 as a public-private partnership which was designed to foster the new ICT sector by funding innovative products or high-growth services. Today, the MNF provides ticket sizes as of MAD 1 million (World Bank, 2017b).

Additionally, MITC Capital, MNF's management company, has set up **MNF Angels**, whose main mission is to select technology start-up projects with high-growth potential, provide technical assistance to both entrepreneurs and business angels, including financial, strategic and legal aspects and support their investors in the preparation of investment files in order to present them to the MNF Angel club members (Maroc Numeric Fund, 2017). With a growing number of Business Angels in the MNF Angel club, investment tickets range from MAD 100,000 to MAD 1 million. Selected start-ups will not only benefit from MNF Angel's financial support, but also from the availability of skills, experience and relational networks of these many Business Angels.

Human Capital and Skills

There are a number of Moroccan university programs, which have been developed in recent years which aid in the development of innovation and entrepreneurship. The **Emines School of Industrial Management of the Mohammed VI Polytechnic University in Ben Guerir** has a two-fold mission statement, part of which is to prepare students to become entrepreneurs. There is no dedicated specialty in this field, but rather an emphasis of the university in general[37].

[37] https://www.emines-ingenieur.org/a-propos/l-emines

Moreover, the French **EmLyon Business School** has a campus in Casablanca and three MS programs, one of which is exclusively dedicated to entrepreneurship, and is accredited by the Conférence des Grandes Écoles (CGE); it aims to create specialists in small business.[38] The business school is also affiliated with a successful start-up incubator in Lyon, France. Furthermore, the **ESCA Écoles de Management**, a business school in Casablanca, has a program in entrepreneurship and international development which exposes students to a broad range of entrepreneurship courses[39].
In 2011, a joint project between UNESCO and the UK's StratREAL Foundation attempted to instigate entrepreneurial education in several Arab states, including Morocco.[40] A working group of representatives from academia and government in Morocco analyzed the current status of entrepreneurial education and developed a roadmap for its integration in the school and university curriculums[41].

Challenge Facing Moroccan Entrepreneurs – Human Capital

The biggest challenge facing Moroccan entrepreneurs truly boils down to attracting and maintaining the right team – human capital that is skilled and qualified to meet start-up needs. Additionally, cultural concerns generated from family norms, traditions and values also play their role in influencing an entrepreneur's path, especially in their early years. Furthermore, "just like in most Arab cultures, the importance of having a solid and large network is what helps entrepreneurs ensure income in their early years (Nhairy, 2016).

Network and Support Systems

The entrepreneurship system has grown considerably in Morocco, and the variety of supporting mechanisms such as incubators and accelerators have been crucial in doing so. **Figure 19** displays a comprehensive look at the players involved, including the supporting structures. Many of the players in this network are interrelated, and they fulfill certain niche roles in the ecosystem. **CEED Morocco**, for example, is a start-up incubator which was born out of an international SME investment group which focuses on emerging markets[42]. This incubator is also partnered with the aforementioned MarocPME, to provide their clients with a range of funding solutions. One of CEED Maroc's entrepreneurial development programs has yielded a 37% average increase in turnover[43].

Other examples of support mechanisms that are present within the Moroccan entrepreneurial scene are the following:

- **Start-up Maroc** – largest start-up community in Morocco committed to advancing the success of start-ups in Morocco through targeted strategic actions: education, networking, raising awareness and supporting the growth of the entrepreneurial community by stimulating economic development focused on entrepreneurship, job creation and innovation throughout Morocco (StartUp Maroc, 2017).
- **ENACTUS –** international NGO that works in the field of student social entrepreneurship and sustainable development. ENACTUS develops partnerships between business and higher education to prepare students to contribute substantially to the development of their country as future entrepreneurs, ethical and socially responsible leaders. In the scene for 14 years now, the INGO has created substantial impact (ENACTUS, 2017):
    - 100+ teams across Morocco
    - 4,000 students
    - 195,000 beneficiaries

[38] http://casablanca.em-lyon.com/masteres-specialises/m-s-entreprendre/
[39] http://www.esca.ma/en/programs/entrepreneurship_and_international_development_track
[40] http://www.unevoc.unesco.org/fileadmin/user_upload/docs/EPE_Final_Evaluation_Report__EN_.pdf p. 5
[41] http://www.unevoc.unesco.org/fileadmin/user_upload/docs/EPE_Final_Evaluation_Report__EN_.pdf p. 7
[42] http://ceed-morocco.org/who-we-are/
[43] http://ceed-morocco.org/our-impact/

- 110+ events
- 250 projects
- 250,000 hours of volunteer work
- 50+ partnerships

> **Moroccan Center for Innovation and Social Entrepreneurship (MCISE) -** not-for-profit organization dedicated to finding entrepreneurial and innovative solutions to every social challenge in Morocco. Notably, among the Center's programs is **Dare Inc**. – Morocco's leading incubator (initial MAD 30K financing, access to co-working space, coaching and mentoring, access to investors and overall business support) (Dare Inc., 2017).

On the other hand, many international organizations have solidified their presence in the Moroccan entrepreneurial scene through the establishment of support programs, and providing access to grants and competitions.

For example, the **British Council**, the World Bank, and the **U.S Embassy** provide support and training for new entrepreneurs. Their main focus is on promoting social entrepreneurship by supporting educational and environmental projects. However, more awareness and mainstreaming of the existence of such programs is needed to ensure a wider coverage in the ecosystem. Below is an overview of some of these programs:

1. **British Council – Social EntrepreNorth Program**

A good example of the support mechanisms put in place by international organizations in support of Moroccan entrepreneurship is the British Council, who, in November 2016, was able to secure "£300,000 from the Foreign and Commonwealth Office's North Africa Good Governance Fund to lead a one year project that will support the development of youth led social enterprises in Northern Morocco" (British Council, 2017).

This one year project, entitled **Social EntrepreNorth** will "focus on social enterprise as a means to develop locally-owned, innovative solutions to social and economic challenges", mainly high youth unemployment, which has reached almost 40% among youth aged between 15 and 24 years of age (British Council, 2017).

In order to implement this project, the British Council has teamed up with the **Abdelmalek Essaedi University in Tétouan** to establish a social enterprise incubator programme. The main goal of the established social enterprise incubator will be to "train a team of social enterprise trainers and help students gain the skills to secure employment or start their own social enterprises" (British Council, 2017).

Other features of Social EntrepreNorth include:

- Engaging with local authorities and encouraging them to be more responsive to youth needs, improve service delivery, and support social enterprises
- Strengthening youth inclusion and positive action, therefore developing fair and equitable business structures that address social and environmental issues, foster economic development, and give young people a social and economic stake in stability

2. **U.S. Embassy – Middle East Partnership Initiative (MEPI)**

The U.S's MEPI program is geared towards empowering "partnerships between citizens, non-governmental organizations, the private sector and government institutions to promote common shared solutions for the people of the Middle East and North Africa" (U.S.- MEPI, 2017a). As part of its core objectives towards economic reform, the MEPI program has created a number of economic projects to "promote improved business enabling environments, entrepreneurship, and job skills training to help

cultivate broad-based opportunities for everyone". This was the case for Morocco and the multiple projects that have come about as a result of this are cited below:

- **Start Up Your Life** – a non-profit organization with the mission of helping early and seed start-ups grow and turn into high-potential businesses; it operates at the "seed" stage of the start-up ecosystem
- **INJAZ Al-Maghrib (Injaz Morocco)** – similar to INJAZ Lebanon, INJAZ Al-Maghrib is a non-profit organization that engages the private sector with the youth to contribute to the emergence of a new generation of entrepreneurs. The ***Company Program*** – INJAZ Al-Maghrib's flagship program, aims to instill an entrepreneurial spirit among Moroccan high school students. Students go through 16 sessions (1.5 hours each) undertaking their own micro-enterprise from start to finish (ideation to business plan to market). The program ends with a series of competitions involving all micro-enterprises created through this program (INJAZ Al-Maghrib, 2017).
    - Such a program is adhering to **SDG 4 on Education**, especially **SDG 4.4** on increasing the number of youth and adults who have relevant skills for employment, decent jobs and **entrepreneurship**.
- **Fostering a New Generation of Social Entrepreneurs** – This project equipped over 2,500 students, ages 13-17, attending public schools, from middle- and low-income families, from Meknes, Fez, Sale, and Kenitra with social entrepreneurship education and skills

(U.S.-MEPI, 2017b)

One example of a start-up in the network of Morocco's entrepreneurial ecosystem is **eLum**. eLum markets an energy usage operating system designed to use an algorithm that optimizes power from multiple sources to save money for industrial and commercial users in Africa. The operating system is cloud based and artificially intelligent, and it can operate on or off of an electrical grid[44]. The start-up is innovative in nature because eLum's EnergyOS manipulates pre-existing technologies such as diesel generator sets, photovoltaic panels, and battery banks to make energy more cost-effective to the user.

eLum is fulfilling multiple SDGs in implementing their product, such as SDG 7 for affordable and clean energy; they are contractors for renewable energy users, thus growing the industry. The company is building an innovative industrial infrastructure since they would like to have their software suitable for use on any electrical grid technology[45], thus fulfilling SDG 9. Also, the green infrastructure is made more cost effective through eLum's operating system, they are also fulfilling SDG 13 by combating climate change. Various other SDGs could be indirectly implemented through eLum's success in the marketplace, such as 8, 11, 12, and 15. The company was founded in 2015[46] and plans to implement their software in Morocco's telecom companies in 2017[47], followed by expansion to other industries throughout Africa. eLum had the support of Morocco's Climate Innovation Center (MCIC), an incubator and network developed by Morocco's primary renewable energy group Masen.[48] MCIC helps bridge the gap between large industry and start-ups such as eLum,[49] and they also supplied MAD 50,000 in grant money to company[50].

[44] http://elum-energy.com/en/my-front-page/
[45] http://elum-energy.com/en/my-front-page/
[46] https://www.crunchbase.com/organization/elum#/entity
[47] https://www.ft.com/content/8960096a-1ae0-11e7-a266-12672483791a
[48] http://www.moroccocic.org/#About_MCIC
[49] http://www.infodev.org/articles/elums-innovation-illuminates-energy-savings-moroccan-businesses?CID=TAC_FB_infoDev_EN_EXT
[50] http://documents.worldbank.org/curated/en/133881493719194269/pdf/114718-WP-PUBLIC-1-5-2017-17-4-3-moroccoceedApril.pdf p. 35

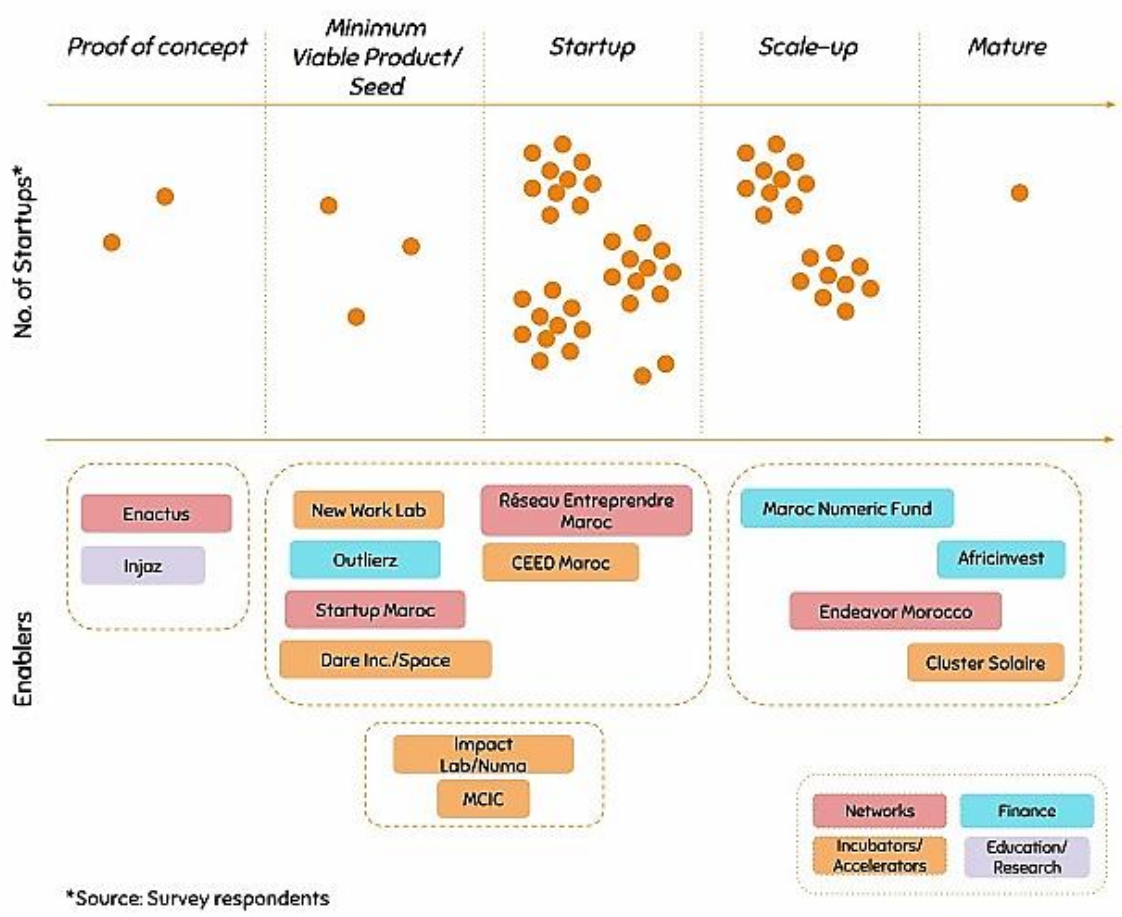


Figure 19: Mapping the Moroccan entrepreneurship ecosystem by stage and enabler (World Bank, 2017a)

Oman

Oman's entrepreneurial ecosystem has experienced a significant increase in support structures in the last decade, due primarily to the focus on small enterprise development by the government. In the words of Sultan Qaboos bin Said, "the National Economy of a country is in fact based on small and medium industries... these are the fundamentals, the foundations of all national economies..."

Oman's economy has steadily grown since the 1970s, a year which represents a crucial turning point for the country. Since this date, oil capital has steadily stimulated Oman's socioeconomic development and infrastructure growth. It is estimated, however, that Oman's oil reserves have less than two decades remaining, and there is a crucial need to diversify the economy. Technology and innovation are key to developing an entrepreneurial ecosystem that will aid in the diversification of the economy into non-oil sectors, thus yielding holistic sustainable development in Oman. Such growth should continue to be addressed by government structures, but grass-roots development and a culture of entrepreneurship should be fostered.

Government and Regulatory Framework

Oman has a number of public sector institutions and regulations that strive to fuel the entrepreneurial ecosystem and thus diversify the national economy. In order to do so, the Sultanate's Supreme Council for Planning has developed a Vision 2020. Much of the plan is in direct alignment with the SDGs, especially SDG 8, 9, and 10. It includes themes such as maintaining environmental integrity while developing the private sector, creating "favorable conditions for economic diversification", as well as enhancing citizens' standard of living and reducing disparities.

The World Bank's annual Doing Business survey examines a number of metrics involved in enterprise development throughout the world. One of these metrics is Ease of Starting a Business, and is analyzed based on factors such as registration requirements, as well as the time and costs associated with government approval. Oman's Starting a Business ranking increased drastically in 2017, placing it well ahead of the MENA average ranking, and ahead of all other Arab countries in this metric, as shown in Figure 20 below.

One recent policy change in particular increased Oman's ranking in Starting a Business from 159 in 2016 to 32 in 2017. Oman accomplished this "by removing the requirement to pay the minimum capital within three months of incorporation and streamlining the registration of employees." Another innovative reform from 2012 was to introduce a **One-stop government website** to streamline the business registration process. This was accomplished using a new Invest Easy e-governance platform where entrepreneurs can fulfill all the appropriate financial and registration obligations for their businesses using an accelerated and open online process.

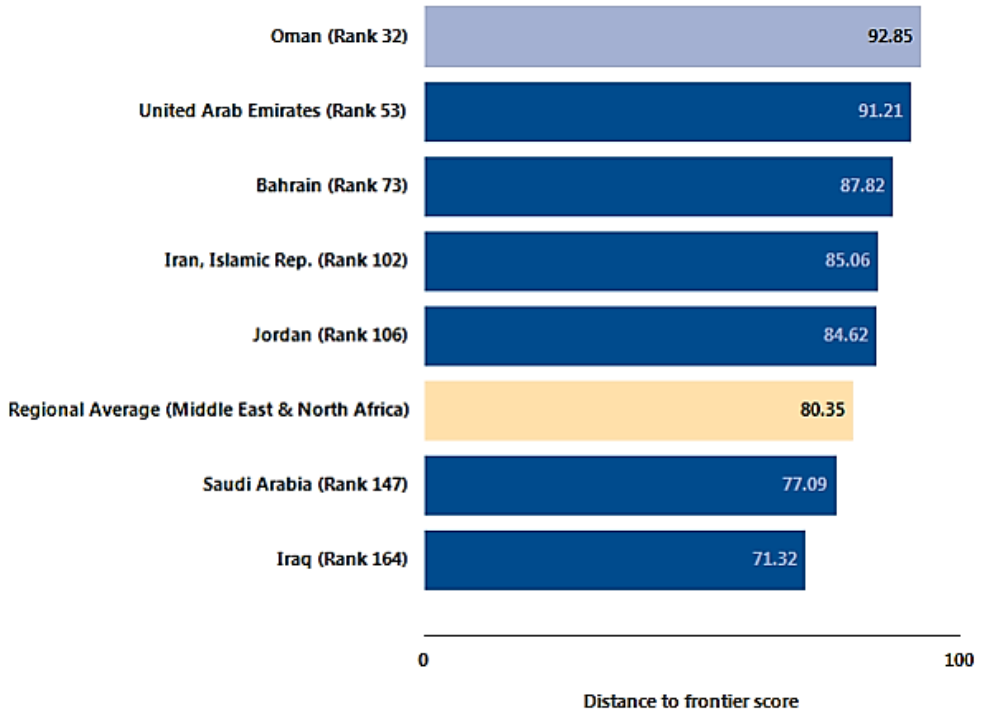


Figure 20: Ease of Starting a Business in Oman

Source: http://www.doingbusiness.org/~/media/wbg/doingbusiness/documents/profiles/country/omn.pdf, p. 20

In another advancement toward openness and e-governance, the Sultanate provides a single-point resource for aspiring entrepreneurs to access the network of SME support structures. **Riyada** is the Public Authority for SME Development in Oman, and it provides a number of resources such as feasibility studies, toolkits, mentorship, as well as access to all applicable laws and regulations for small enterprises. It is an excellent contact point for the aspiring Omani entrepreneur to learn about all of the available support structures, both in the private and public domains. In order to accelerate the entrepreneur's access to the various services offered by the government, Riyada also grants an entrepreneurship card to the qualified applicant (The Research Council Oman, 2016).

Human Capital and Skills

The European Institute of Business Administration (INSEAD) publishes a ranking of talent competitiveness for 118 economies – **Global Talent Competitiveness Index 2017** – based on factors that will "allow a country to attract, develop and employ the human capital that contributes to its ability to grow, compete and innovate, i.e. to the overall prosperity and quality of life of its people" Oman is ranked 9th among 18 Arab MENA countries and 59th overall out of all analyzed economies. The Sultanate has a score indicating that it could develop more in the area of global knowledge skills. People adept in global knowledge skills are those who "combine skills like leadership and creativity with global networks to achieve technological, scientific or other innovations." Therefore, INSEAD identifies Oman as less well positioned to be ready for the future of work relative to other MENA countries.

Universities, Education and Training

Sultan Qaboos University and Salalah College of Technology are the main academic institutions acting as a catalyst in Oman, creating and growing young businesses by providing them with necessary support and financial and technical services, either acting as a standalone incubator or in cooperation with other governmental initiatives such as the **Small and Medium Enterprise Development Fund**.

The Innovation and Entrepreneurship Group at Sultan Qaboos University has this academic year launched a series of "**INOVENT Talks**" targeted at students and the general public. The series hosts successful entrepreneurs to share their experiences and help develop a culture of innovation and entrepreneurship among a wider audience. The university's career center also offers advice promoting aspects of entrepreneurship career opportunities, identification and development.
In a bid to incentivize start-ups and help empower them economically, the procurement department at Sultan Qaboos University in February 2015 invited all entrepreneurs to register their businesses so that they can compete in future university bids awarding them priority.

Salalah College of Technology has founded an "Entrepreneur Club" in December 2013. The club aims to foster entrepreneurial culture among students by conducting workshops, providing consultations and opportunities to gain insights into established start-ups and offering Project Management Professional training (PMP) on campus.

The **SME Development Fund** initiative is working with a number of academic institutions in cooperation with the Ministry of Higher Education in Oman including Sultan Qaboos University where they run the **Entrepreneurial Campus** programme. In 2016, the programme was introduced in 18 colleges serving 1,200 students through 11 clubs. The programme acts as a space that provides a community, resources and physical environments essential to fostering entrepreneurial exploration.

The Entrepreneurial Campus programme is integrated with existing initiatives on campus and consists of a number of elements; the introductory module is a 4-8 hour workshop aimed at all students, while **"Al Namaa" Entrepreneurship Society** acts as a platform that raises awareness and carries out a variety of activities including but not limited to: lectures, contests and visits to and by entrepreneurs. Campus Companies is a component of the programme where students are encouraged to submit a small enterprise proposal and receive funding through Al Namaa club within the university to setup their business. Other components such as the volunteer faculty, advanced module, alumni outreach, and senior entrepreneur module also constitute the Entrepreneurial Campus programme.

Network and Support Systems

A number of support structures are available in the Omani entrepreneurial ecosystem to support aspiring entrepreneurs. Although Riyada is principally a network to connect public and private business incubators and accelerators, they nonetheless have built capacity to incubate, and have helped

launch 10 companies. Other incubators that are government sponsored include the **Sas** entrepreneurship center, which, "since its launch, [has] incubated 38 SMEs which signed a number of contracts with many government and private entities inside and outside the Sultanate, reaching up to 2.40 million Rials". This center focuses on ICT business development, thus enhancing the capacity of the Knowledge Economy through technology in the Omani economy, and directly fulfilling SDG 9.B. Another significant publically founded incubator is **Sharakah**, established in 1998 to encourage the development of SMEs and encourage youth entrepreneurship. One of their objectives is explicitly to "develop the entrepreneurial capability of Omanis". They also offer financial assistance to qualified budding businesses in the form of equity, loan, or bill discounting schemes.

There are also several private-sector incubation centers for entrepreneurs to obtain support and access to the funding network. Zubair Corporation is an asset management corporation with a broad range of specialties. From the Corporation, **Zubair Small Enterprise Center** (Zubair SEC) arose as a private sector incubator and professional network to support small businesses. Businesses incubated at Zubair SEC are more likely to financially benefit from the network that it provides rather than from a funding structure available within the incubator. They do, however, provide qualified members of their dedicated **Direct Support Programme** with financial grants.

All of these entrepreneurial support schemes have their own financing mechanisms or investor networks. Nonetheless, by the standard of the World Bank's Doing Business surveys, Oman has room for improvement with regards to granting entrepreneurs the necessary credit to start their enterprises. Oman was ranked 133rd out of 190 economies in the Getting Credit metric.
The majority of the support structures that are available for Omani entrepreneurs are hosted by the **Knowledge Oasis Muscat (KOM):** a technology park which was opened in 2003 with the purpose of "creating an environment in which budding entrepreneurs, small and medium-sized enterprises and established multi-nationals can coexist, innovate and flourish".

Company Case Study

One innovative company that has benefited from the entrepreneurial ecosystem in Oman is **ASM-tech.** This company aims to bring "concepts to life through digital media technologies." They focus on digital content development, 3D visualization technologies, as well as consultancy for training and planning using the developed technologies. They have completed projects in safety training for oil workers, road safety, health care, tourism, and several other fields.

ASM Technologies is building the Omani knowledge economy, pushing innovation, utilizing the latest technologies, and is an excellent example of businesses that are fulfilling a number of the UN's 2030 SDGs. It is also a beneficiary of the Sultanate's entrepreneurial ecosystem structures in that it is housed in the Knowledge Oasis Muscat.

Oman Wrap-Up

Oman's top-down policy for supporting entrepreneurs and enhancing government openness has helped immensely in diversifying the economy and driving innovation. Since 2005 the number of registered businesses in Oman has increased by over two and a half times. Nonetheless, there is room for improvement in the system as a whole, in particular through grass-roots private sector entrepreneurship and innovation, as well as in the educational system and training mechanisms.

Research from Wamda in partnership with IFC reveals that "the workforce in MENA does not yet find working for a startup to be an appealing career opportunity. Family and society pressure, risk-aversion and lack VM role models are some of the factors that diminish the value of working for a startup in MENA". Steps must be taken in Oman to shift this paradigm, in particular through human capital development by enhancing the importance of entrepreneurship in innovation in the educational and training institutions.

11. Lessons from International Entrepreneurial Ecosystems

France

Bpifrance

Standing for **B**anque **P**ublique D'**I**nvestissement France, Bpifrance's mission is to provide assistance and financial support to small and medium-sized enterprises (SMEs), facilitating access to banks and equity capital investors, in particular during the high-risk phases: Start-up, Innovation, Development, and Buy-Out.

It is a financial institution acting in the French regions that supports SMEs through a decentralized network of **37 regional offices**, being in direct contact with the entrepreneurs and their partners: 90% of decisions are being made at the regional level.

Bpifrance provides French companies with:

- Innovation funding
- Guarantees for bank financing and venture capital
- Investment and operational cycle financing alongside banking and financial institutions
- Equity investment, directly or through partner funds
- Export support (Ubifrance and Coface export) through Bpifrance Assurance Export

(Bpifrance, 2017)

Bpifrance is running several innovation support programs, either for individual companies or for collaborative research and innovation projects. On average, 2500 companies are supported annually. Bpifrance is also running several investment funds dedicated to innovation support, in eco-technologies, life sciences, ICT and other sectors. Every year, 1000 companies are invested on average. Bpifrance has 5 'spaces' that are geared towards bridging the gaps in the innovation ecosystem, namely **Bpifrance Le Lab** - objective is to produce and promote knowledge on SMEs and create a space for exchange and debate between academics, public policy makers and Entrepreneurs on the subject of SMEs (Bpifrance - Le Lab, 2017) and **Bpifrance Le Hub** - a platform that aims to bridge the gap between the traditional economy and the best of innovation and connects large groups, SMEs, and start-ups together (Bpifrance - Le Hub, 2017).

La « French Tech »

La "French Tech" is an initiative launched by the French Government in late 2013 to support the French start-up ecosystem both in France and internationally. The movement designates all those who work in or for French start-ups in France or abroad. The targets are first and foremost the entrepreneurs, but also investors, engineers, designers, developers, major groups, associations, media agencies, public operators, research institutes, and all ecosystem actors who are committed to the growth of start-ups, on the one hand, and their international influence on the other (La French Tech, 2017a).

The key features of La French Tech are what have made this initiative such as change-maker in the French entrepreneurship scene, within the country itself and internationally.

Focus: La French Tech Ticket // Success Stories

The most recent La French Tech scheme is La French Tech Visa - a simplified, fast-track procedure for 3 types of international tech talent (for start-up founders, for employees and for investors) to obtain a residence permit known as the Passeport Talent/Talent Passport.

One significant scheme initiative via La French Tech is **La French Tech Ticket** - a 12-month program that encourages foreign entrepreneurs to come and create their start-ups in France. This program is aimed primarily at international entrepreneurs and can accommodate a maximum of one French team member in an international team made up of 2 to 3 co-founders[51]. To date, this public policy has been highly conducive to the creation of innovative start-ups not only within the French market, but internationally as well.

Season 1 of La French Tech Ticket was launched in June 2015 and closed in 2016 with a total of 23 start-ups selected out of 722 submissions. It was met with great success. Season 2, which closed in September 2016, has already built on the key successes and lessons learned from Season 1. More "start-up-oriented with tailored benefits" enhancements have been made for Season 2.

According to La French Tech Ticket (2017b), "while it was only in the Paris region for the first edition, the Program has been extended to La French Tech Métropoles[52] (13 in total, across France), organized by thematic and business areas". As of January 2017, 41 incubators in France will host Season 2's 70 winning projects (in comparison to 23 winners from Season 1).

Malaysia

In 2011, the Malaysian government decided to develop the **New Economic Model** (NEM) approach, whose "overall purpose is to grow Malaysia's economy so that Malaysia can become a developed country by 2020 by transforming it from one that is led by the government to one that is market and private sector-driven" (Wan Jan, 2011). The NEM is therefore a strategy to bring Malaysia out of its "middle-income trap". Below is figure showing the goals of the NEM (Figure 21).

[51] As per the program's Season 2 conditions for 2016-2017

[52] **La French Tech Métropole**: a label that is recognized by the French government given to a territory in France that has a remarkable entrepreneurial ecosystem most known for its growth dynamics and in particular for its 1) mobilization of entrepreneurs, 2) cumulative amount of fundraising, and 3) the number of fast-growing start-ups and world-class success stories.

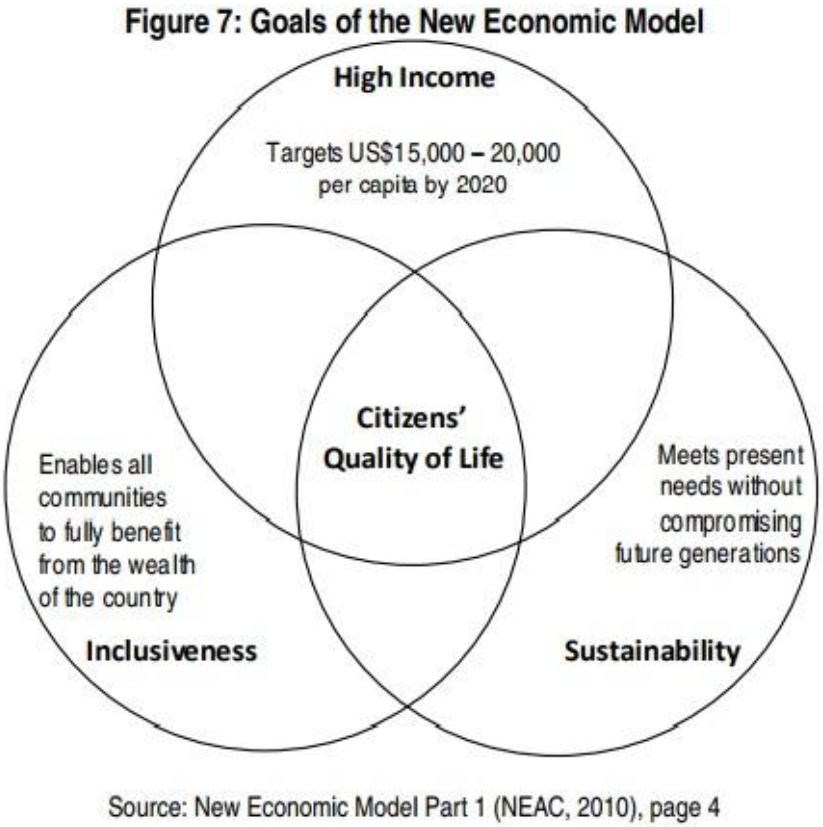


Figure 21: Goals of Malaysia's New Economic Model (NEM) (Wan Jan, 2011)

Ranking in the Global Innovation Index 2017

According to the Global Innovation Index (GII) for the year 2017 (WIPO-INSEAD-Cornell University, 2017), **Malaysia ranks 37th out of 127 countries** in this year's listing. Considering this, Malaysia is gearing itself towards transitioning from a resource-led economy to one that is driven by innovation.

With a strong Human Capital and Research base, Malaysia ranks 29th in the gross expenditure on R&D (1.3% of GDP), as well as boasts a high percentage of graduates majoring in science and technology (ranked 7th). Furthermore, Malaysia ranks well in Innovations Linkages with solid university-industry research collaboration, ranking in at 11th place. Overall, the country's top rankings include high-tech exports/imports, less re-exports/imports (ranked 1st). However, Malaysia still struggles in regards to some Business Sophistication sub-indices such as firms offering formal training (ranked 79th) as well as in Creative Outputs sub-indices such as the number of trademarks by origin/bn PPP$ GDP (ranked 84th).

Science, Technology and Innovation Governance

The Malaysian government, particularly the Office of the Prime Minister, is a key promoter, motivator and marketer of Malaysian innovation outcomes, making science, technology and innovation (STI) a prime strategy in their Vision 2020. According to Abu (2015), "the Science Advisor chairs the National Science and Research Council (NSRC) that prioritizes R&D activities in the public sector and universities, encourages public-private-academia collaborations, and endorses new STI-related policies and acts, amongst others". Below is a figure depicting the Malaysian STI governance structure **Figure 22).**

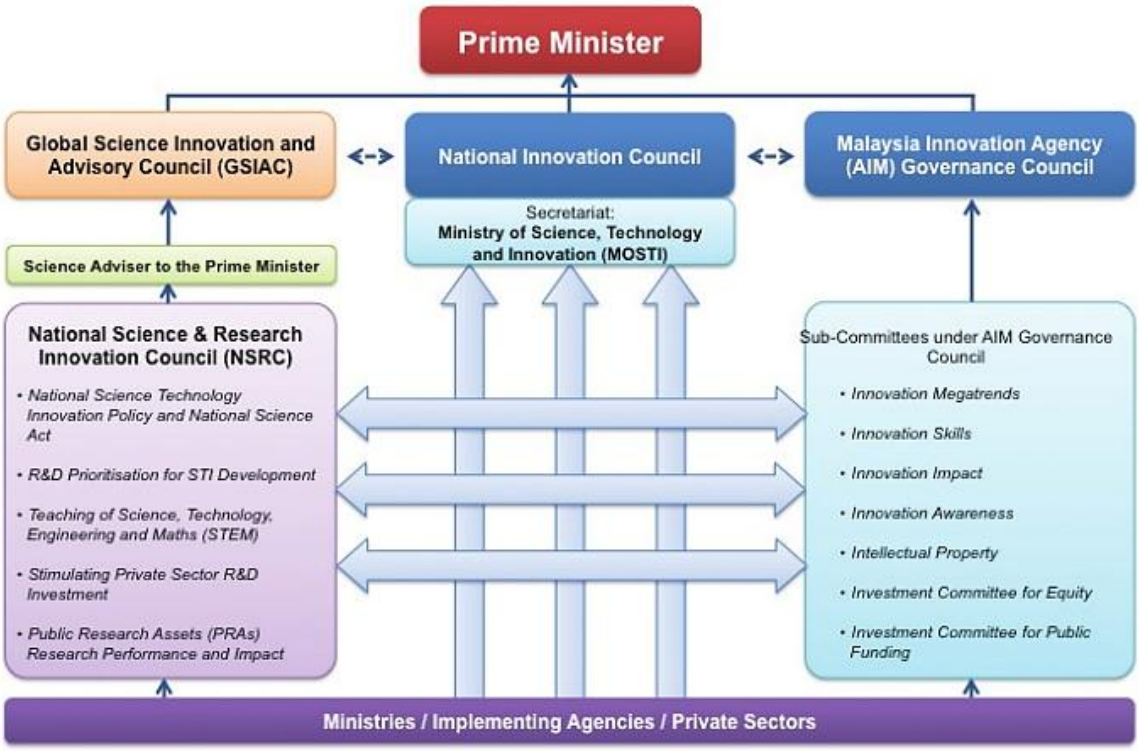


Figure 22: Malaysian STI governance structure (Sulaiman, Abdallah, & Othman, 2014)

Malaysian National Innovation Model (MNIM)

The drive to shift the country from a resource-led economy to an innovation-led economy came forth in 2007 with the adoption of the Malaysian National Innovation Model (MNIM). Given that in earlier years, Malaysia had difficulties getting their innovations to market, even though the country heavily pursued R&D activities but without much attention to market needs, leading to poor levels of commercialization. Therefore, in order to address this need, the MNIM "introduced the **market pull approach** for short and medium-term results, complementing the longer-term target from the **technology push approach"**, as demonstrated in the following figure Figure 23.

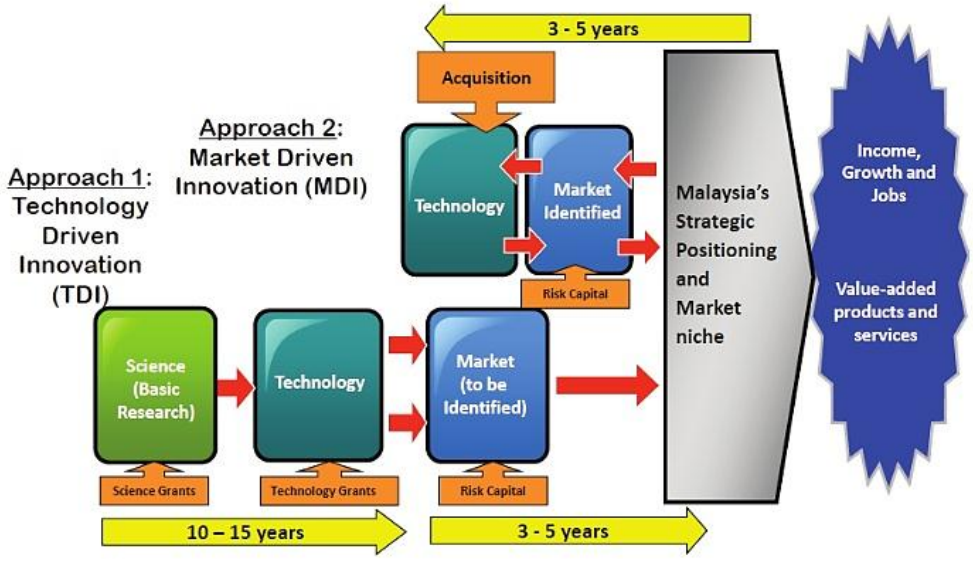


Figure 23: Malaysia's National Innovation Model, showing 1) Market-driven Innovation and 2) Technology-driven Innovation Approach (Sulaiman, Abdallah, & Othman, 2014; as adapted from the Ministry of Science, Technology and Innovation)

Figure 24: Innovation Chain (Sulaiman, Abdallah, & Othman, 2014)

Approach 1 – Technology-Driven Innovation (TDI)

In this first approach, the innovation process is more linear, with the chain starting with basic R&D, leading up to the said "innovative" technology funded by technology grants (refer to Innovation Chain), leading to an integration into a market that has yet to be identified, with the ultimate goal of increased income, growth and job creation, not to mention the creation of value-added products and services. This is a long process, taking at least 10-15 years before any commercialization can take place.

Approach 2 – Market-Driven Innovation (MDI)

As opposed to the above approach, Market-Driven Innovation, first, takes less time (3-5 years) to achieve commercialization within an already defined market, which is backed up by Venture Capital funding. This process is more interactive in regards to the linkages that exist between the technology phase, which often involves acquisition of said technology, and the market phase.
It is for this reason that the Malaysian government is pushing for the implementation of the following policy prescriptions for the country's innovation-led economy initiative (Sulaiman, Abdallah, & Othman, 2014):

1. Shift to an innovation-led economic strategy
2. Pursue aggressively MDI, and continue to actively support TDI
3. Focus government's role on risk mitigation to assist private sector drive for MDI
4. Expand incentives / grants for Entrepreneurs to acquire technology
5. Adopt new Venture Capital (VC) model
6. Conduct programs in Malaysia in Entrepreneurship, innovation risk management and mindset change with university-industry collaborations

Malaysian Innovation Ecosystem (MIS)

As with any country, developing or developed, the innovation ecosystem plays an essential role in improving a country's global competitiveness by driving growth and increasing productivity. The interconnectivity, as seen in the figure below, between entrepreneurs, SMEs, academia, industry, government (regulations, laws, tax incentives), financial entities (venture capitals), public-private partnerships, and business support entities (incubators, clusters and networks) is evident in the country's drive towards an innovation-led economy.

Figure 25: Malaysia's interconnected innovation system (Sulaiman, Abdallah, & Othman, 2014)

Chile

Introduction

Entrepreneurship is an essential component of economic growth and development. New business entities don't only generate value added, fiscal revenues, employment and innovation but are also important for the development of small and medium sized business sectors; the core of most competitive economies. Entrepreneurship policies are aimed at encouraging economic and social productive activities by individuals acting independently in business. Policies may be implemented directly to address entrepreneurs' needs through business advice programs or through broadcast methods such as education policy. Entrepreneurship policy and SME policy both intend to affect economy in certain ways. In other words, both seek to advance and amplify the performance of economic actors.

Additionally, the United Nations Conference on Trade and Development (UNICTAD) has developed an Entrepreneurship Policy Framework which aims to support developing countries' policy makers and those transition economies in the design of initiatives, measures and institutes in order to promote entrepreneurship. The Framework has a narrow scope and focuses in particular on policies that aim to promote the emergence of potential entrepreneurs and facilitate the new business startups in transition economies and developing countries. Moreover, the framework aims to assist policy makers to formulate policies that promote entrepreneurship across all sectors and industries. Hence, the utmost goal of the framework is to accomplish Sustainable Development. Examples of Sustainable Development include topics such as poverty reduction, gender equality and environmental sustainability.

Figure 26: Entrepreneurship policy framework (UNCTAD, 2012)

In fact, National Entrepreneurship Strategies need to be modified according to each country's specific conditions. For instance, entrepreneurship in low income countries is needed because there is a necessity for entrepreneurs. However, in wealthier societies the level and necessity tends to be lower[53]. In Chile, a successful entrepreneurship ecosystem requires cooperation from government regulations, funding mechanisms and human capital.

Public Sector: Regulation, Policy, Laws and Incentives

Although Chile lags behind most OECD countries in ensuring public participation in the rule-making process, access of citizens and businesses to regulations and formalities has improved a lot. The introduction of the "Freedom of Information Principle" enabled citizens to ask for information that contributed to increasing the transparency of the regulatory system. Moreover, the Regulatory Reform Program is an important part in helping governments improve their regulatory quality, which, in turn, improves economic growth. Some 200,000 Chileans have received benefits in one form or another from government-backed entrepreneurship programs. Concerned people claim that most of these companies fail without government assistance or fall behind greatly as soon as Chile's generosity ends[54].

However, one drawback is that Chile does not make systematic use of Regulatory Impact Analysis (RIA), which improves the effectiveness and efficiency of regulations.

Efforts have been made to introduce ex ante impact assessments, but it is still not a standard practice among regulators. In fact, a couple of regulators are exploring the use of risk-based approaches to better focus their evaluations and implementation resources. For instance, the Directorate of Budget (DIPRES) of the Ministry of Finance is evaluating real data based on the allocation and use of financial resources in different government programs, projects and institutions. Despite the great improvements over recent decades, regulatory policy barriers for young firms still remain in Chile.

[53] https://www.mygov.in/sites/default/files/master_image/Draft_National_Policy_for_Skill_Development_and_Entrepreneurship_2015.pdf
[54] https://techcrunch.com/2016/10/16/a-look-into-chiles-innovative-startup-government/

Product market restrictiveness for Chile remains above the OECD member average. The governance of state-owned enterprises can be enhanced and the state's involvement in business operations further aligned with best practice. For example, the government still contributes to pricing guidelines for road transport companies and the costs of water purification and wastewater treatment. Regulatory procedures are very complex, involving extensive licensing requirements, and competition in some network sectors such as rail and gas is hampered by high entry barriers.

The current government of Chile is committed to reforming the competition law framework to ensure effective competition. The proposed reform is ambitious and in line with OECD best practices and OECD recommendations to Chile. The core of the reform includes a proposal to increase the effectiveness of sanctions against illegal cartels by promoting the introduction of criminal sanctions for executives and a higher ceiling for monetary fines.[55]

Recently, Chile is considered one of the most stable economies in Latin America. It has sustained economic growth and reduced poverty. Governance arrangements in Chile have attracted businesses and provided certainty for economic activities. However, the lack of an inclusive approach to regulatory reform may have reduced potentials for achieving higher economic outcomes. Below, the document views on the quality of governance provided in industrial and developing countries.

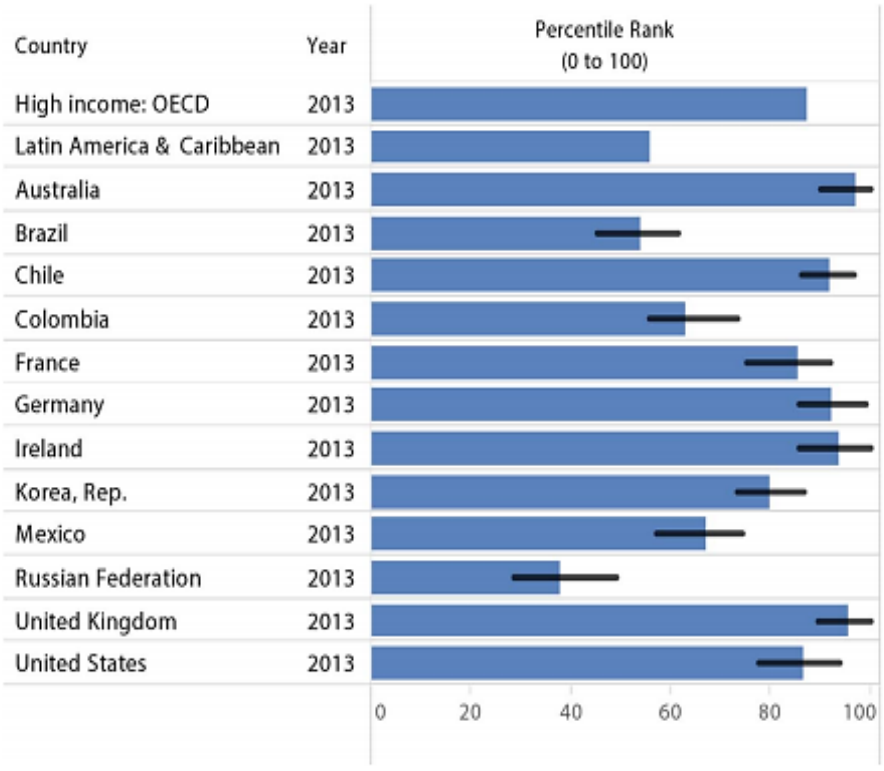


Figure 27: Quality of governance in industrial and developing countries (OECD, 2016)

Support Schemes and Funding Mechanisms: Incubators, Accelerators

Various support schemes are available in Chile's entrepreneurial ecosystem to support aspiring entrepreneurs. There were competitions held three times a years to select suitable candidates attracting over 5,000 applications from which over 240 projects were selected each year. **Start-Up Chile**, which has been used as a platform by the Chilean government, has grabbed entrepreneurs through constant

[55] https://www.export.gov/article?id=Chile-openness-to-foreign-investment

communication and supportive roles and sometimes even topped Silicon Valley in the tech media with the way it has attracted talented startups in its initiatives.

Start-Up Chile was established by the Chilean government in 2010 and aims to attract high potential entrepreneurs from all over the world to stay in the country. The incentives it renders in are: 40,000 USD equity-free seed capital, one year visa and access to capital and social networks that all of Chile could offer[56]. Statistics reveal that around 37% of Start-Up Chile's entrepreneurs began their activities in Chile between 2010 and 2012. Their contribution was very low compared to CORFO's Seed Capital Program where around 94% of the companies began their activities between 2008 and 2012. Data also suggests that the business survival rate is twice compared to Start-Up Chile. Seed Capital Program provides up to 120K USD in seed capital to selected ventures. It is well noted that **CORFO** is categorized based on its Business Incubator Program. It is a grant for business incubators such as Magical Startups. It provides as much as 75% of the total project cost for incubators. Aside from funds, the institution also provides resources such as assessment, networking, positioning and operational assistance such as strategy management, startup internationalization and much more.

Besides the leading accelerators Start-Up Chile and CORFO, there are others such as Inbuca UC and Bomba Camp. Notably, Magical Startups is an accelerator established without the direct help of the government. It makes up for an ambitious vision, which is to become Latin America's top accelerator and incubator for digital startups.

Academia and Human Capital: Universities, Training, Skills Development

The National Innovation Council for Competitiveness established the national innovation strategy that consists of three pillars: 1) business innovation, 2) human capital for innovation and 3) science and strategic orientation. Chile executed significant advancements in education during the last twenty years. There are several initiatives held to improve the quality of the school system through introducing and establishing learning performance standards and monitoring teaching practices. For instance, MESP is a program that offers training via sessions concerning administrative planning and an asset-transfer component[57]. Hence, it is remarkable that Chile has increased its private and public human capital investments. Chile compares well with developed countries and is ahead of several Latin American countries[58]. In addition to that, ISIS Innovation, which is an enterprise that offers training material in entrepreneurship, has worked with the Universidad de Chile in order to enhance and develop the entrepreneurial attitudes and skills of its staff and researchers.[59]

Unfortunately, quality of learning outcomes (measured by scale assessments such as PISA and TIMMS) remains unsatisfactory and there are still challenges still facing the country in the domain of education. Research on entrepreneurship education is widely spread in Europe and the U.S, whereas research results for Chile, South Korea and Japan are non-existent in internationally published journals. There is thus a strong need for comparative studies in order to understand pitfalls, follow common successful trends, and anticipate new approaches in entrepreneurship education. Two consultants in 2010 reviewed the current situation in several OECD countries concerning the training of educators and found out different stages of development. They indicated the lack of training opportunities to entrepreneurship educators in a number of OECD countries, particularly in Belgium, Chile, Japan and Australia[60].

Concerning human capital, labor market regulations in Chile are not neutral and affect the allocation of labor across industries and corporations. Evidence shows that these regulations decrease the adjustment speed of firms that hire intensive labor thus contribute to labor misallocation and affect

[56] http://www.wipo.int/wipo_magazine/en/2014/05/article_0006.html
[57] https://www.dartmouth.edu/~neudc2012/docs/paper_294.pdf
[58] https://www.oecd.org/edu/ceri/41676112.pdf
[59] https://innovation.ox.ac.uk/wp-content/uploads/2015/04/Entrepreneurship-Training-final.pdf
[60] http://www.oecd.org/edu/imhe/46588578.pdf

productivity growth compared to OECD countries. For instance, to reduce gender gap, Chile is encouraging women to join the labor force through publishing policies that seek to grow job market options for women, while reducing the opportunity costs of them joining the labor force.[61]

Conclusion

Chile is a country in Latin America which is increasingly gaining global attention. Around 6 years ago, Chile has converted itself into the innovation and entrepreneurial hub of Latin America with the aid of the government. Reviewing the regulatory stock is particularly important in Chile, as high quality regulations may be irrelevant as circumstances change. Periodic evaluations and reviews are needed to assess the impact of regulations and whether the desired outcomes are being accomplished. Additionally, more innovation and technology transfer schemes are needed similar to initiatives such as Start-Up Chile.

Besides, steps should be taken in Chile particularly in human capital development by enhancing the importance of entrepreneurship in innovation in educational and training institutions[62]. Research centers of excellence have been under development in Chile since the late 1990s, originally through the World Bank's Millennium Science Initiative (MSI) and subsequently funded by the Chilean government[63]. Last but not least, steps must be taken towards further involving the government and enhancing its cooperation with the labor market to ultimately reach a successful entrepreneurship ecosystem.

Romania

Ranking in the Global Innovation Index 2017

Over recent years, Romania has prized itself on becoming a rising economy, with economic growth shown to be higher than the EU average. Entrepreneurship in Romania is on the rise, much thanks to several positive attributes of the country's booming ecosystem and its most prominent feature – a strong ICT-based human capital.

Romania ranks 42nd out of 127 countries in the 2017 GII, which is a good positioning for a transitioning economy. Among the country's top scoring sub-indices is its number of ISO 14001 Environmental Certificates/bn PPP$ GDP (ranked 1st), number of ISO 9001 Quality Certificates/bn PPP$ GDP (ranked 2nd) and its Ecological Sustainability (ranked 3rd). Romania further ranks well in regards to Creative Outputs sub-indices - ranked 5th for Cultural and Creative Services Exports as % of total trade (WIPO-INSEAD-Cornell University, 2017).

Romania ranks 18th in ICT Services Exports as % of total trade and 26th in ICT Services Imports as % of total trade, highlighting the country's strong technology base. Romania's does indeed lie in its high ICT human capital and talent, propelled by a solid internet infrastructure that is being used by a growing pool of talented developers. Romania's flare for ICT is in part the result of its 1) high number of ICT graduates per year, 2) high competencies in math and computer science, 3) high availability of engineers per capita as compared to the U.S., Russia, or China, and 4) high value for money for hired developers, given Romania's lower costs of living (Costescu, 2016).

Entrepreneurship in Romania

Even with all the above, the entrepreneurial framework conditions of the country could still be improved in the "areas of government policies, entrepreneurial education in primary and secondary school, and entrepreneurial finances" (Radaeur & Roman, 2016). Thus, the most frequently recommended policy changes that are cited for fostering entrepreneurship in Romania are 1) the

[61] https://www.rand.org/content/dam/rand/pubs/working_papers/WR1000/WR1087/RAND_WR1087.pdf
[62] https://www.oecd.org/edu/ceri/41676112.pdf
[63] https://www.innovationpolicyplatform.org/document/research-centers-excellence-chile

support of government policies, followed by 2) providing financial support for entrepreneurship, and 3) the improvement of entrepreneurial education and training.

Romania, even though making substantial progress, is still lagging behind in regards to innovation – regions in the country have been tagged as a "modest" and/or "moderate innovators". This is due to the country's low government expenditure on R&D. However, given Romania's lag in innovation performance as compared to the EU, the country "has set as target for 2020 to spend the equivalent of 2% of GDP on R&D, significantly higher than the current level" (Dachin & Postoiu, 2015).

12. Findings and Recommendations

Recommendations for Specific Components of the Entrepreneurial Ecosystem

Table 8: Findings, recommendations across main entrepreneurial pillars, and systemic regional recommendations

	Findings	Recommendations
Access to Market	• Each country in the MENA 'market' has its own, varying, set of systems, laws and regulations, which impose some limitations to the promotion of entrepreneurship. • Among the most successful start-ups attracting funding and investments are from the e-commerce sector • MENA region lags behind on internationalization	• Facilitation of free movement of goods, people (human capital) and companies, which would provide a significant boost to start-ups and businesses • Strengthening the links with the Arab Diaspora to open up new markets for Arab entrepreneurs • Expanding the market information for entrepreneurs and helping them in participating to international exhibitions by creating special funds for this purpose
Access to Finance	• Funding is concentrated in the early stages of the start-up chain. • Start-ups have difficulties to find funds at the pre-seed and seed stages and there is a risk of not finding enough funds for the later stages, Series C and above.	• Promoting the Angel Networks among the successful entrepreneurs in the Arab countries and in the Diaspora through Angel Clubs, for example • Promoting and facilitating the foreign investments in growth stage Arab start-ups • Creating specialized funds for pre-seed financing for Minimum Viable Product (MVP) and for experimental prototypes

Human Capital / Access to Skills	• Strong investment in primary, secondary and higher education • Gap in the quality of highly skilled staff • Lack of highly skilled people in ICT • Inadequacy in the university offer in the market needs • Important brain drain • Few graduates engaged in research activities • High unemployment rate among university graduates	• Making higher education more adapted to the needs of the economy by creating incentives for university-business collaboration • Improving the agility of the skilled labor through the development of continuing education adapted to the changes in the economy • Creating incentives for academia to conduct research and to promote entrepreneurship among academic staff and students • Supporting transfer of technology between universities and industries through Technology Transfer Offices (TTOs) at the level of the universities with the support at the national level for enhancing the mechanisms of transfer and providing highly-skilled experts
Legal Framework and Public Policies	• Conflicting interests among the different entities of the public sector • Fragmentation of the initiatives • Lack of follow-up on the implementation of strategies and plans • Lack of clear and enforced Intellectual Property Laws • Absence of tax incentives for supporting start-ups • Need for streamlining the administrative procedures for starting a business	• Creating a One-stop Shop to facilitate the business registration procedures • Strengthening the institutional capacity for monitoring and evaluation (M&E) • Integrating M&E at every component of the entrepreneurial ecosystem, based on real, complete and continuously updated data, which requires Observatories for the assessment of the national entrepreneurial ecosystems • Issuing and empowering up-to-date Intellectual Property Rights laws, tax incentives for investors and early start-up companies, and tax exemptions for the start-ups for a designated amount of years (3-10 years)
Systemic and Regional Recommendations	• Creating an Arab Intellectual Property Organization facilitating both the filing and enforcement procedures to avoid outsourcing to other countries • Launching an Arab program to support start-ups across the region, founded by entrepreneurs from the different Arab countries • Establishing a digital platform putting in contact investors, entrepreneurs, researchers and policy makers, and providing information about technology institutions, universities, incubators, accelerators, and industries	

Recommendations for Specific Actors

Table 9: Recommendations for specific actors of the Arab entrepreneurial ecosystem, showcasing the contribution of policy each one to the implementation of the SDGs

No.	Actor	Policy Description	Objective	Contirbution to the Implementation of SDGs
1.	**Arab League**	- Building a platform linking Arab researchers and experts all over the world to promote support for R&D – -Taking advantage of the Diaspora and reducing the impact of brain drain	Strengthening the knowledge generation and technologies production	**In reference to Goal 17:** - The main purpose of this policy is to enhance South-South and international cooperation, as indicated in Target 17.6. - It will enhance North-South cooperation by tapping into the potential of the Arab Diaspora. - It promotes the transfer dissemination and diffusion of new technologies as indicated by Target 17.7. - It will enhance also the technology and innovation capacity building mechanisms, as indicated in Target 17.8.
		Creating matching funds between universities and industries or researchers and entrepreneurs for seed projects	Bridging Universities and entrepreneurial ecosystem	**In reference to Goal 9:** This policy will enhance the technological infrastructure and promote public-private collaboration on research and innovation, as indicated in Target 9.5.
2.	**Ministries of Economy**	- Updating the IPR law - Clarifying the status of software applications - Issuing guidelines and code of practice for universities and businesses to supplement the laws and contribute to trust building measures between universities and businesses - Establishing a fund for patenting to which universities, industries or individuals can apply	Enhancing linkages between supply and demand – Knowledge and technology transfer	**In reference to Goal 8:** - This policy will support productive activities and creativity, as indicated in Target 8.3. - It will promote the industrial diversification, sophistication and value addition to services and commodities, as indicated in Target 9.b.
3.	**Ministries of Telecommunications**	Improving the quality and reducing the cost of telecommunications services	Supporting the demand side of innovation	**In reference to Goal 9:** This policy will contribute to increasing access to ICT and provide affordable access to the internet, as indicated in Target 9.c.

4.	**Universities**	- Promoting research and innovation by releasing research-oriented faculty from teaching credits - Promotion rules, career advancement and job offering should include patents, research collaborations, and projects with other universities and the industrial sector as important criteria. This is an incentive for researchers to engage in innovation activities - Extending the functions of university laboratories to include innovative research and not only teaching and promoting their exploitation by external entities - Creating new career opportunities for professional researchers and research technicians at the university	Strengthening the knowledge generation and technologies production	**In reference to Goal 4:** - This policy will contribute to increasing the number of graduates and faculty members who have relevant skills for employment and entrepreneurship, as indicated in Target 4.4.
		- Redefining the legal status of universities allowing universities to engage in licensing and commercializing the technologies produced by its researchers, and private universities to adapt their non-profit status. - Relaxing or removing regulations that prevent faculty members from working with private sector	Enhancing linkages between supply and demand – Knowledge and technology transfer	

		and business community or establishing new company - Establishing TTU - Adoption of a clear IPR policy such as the one submitted by ESCWA		
		Establishing an industrial PhD program with possible extension to industries	Enhancing linkages between supply and demand – Knowledge and technology transfer	
5.	**Executive Authorities such as Council of Ministers, Prime Minister Office**	Preparing a technology transfer law	Enhancing linkages between supply and demand – Knowledge and technology transfer	**In reference to Goal 9:** This policy should upgrade the technological capabilities of industrial and productive sectors, as indicated in Target 9.5.
		- Establish an advisory committee promoting the collaboration between the different public authorities and external experts to coordinate entrepreneurial policies making throughout all public institutions - Giving guidance and refining agencies' governance	Defining systemic measures at the state level	**In reference to Goal 9:** It contributes to build and promote inclusive and sustainable industrialization and fostering innovation.
6.	**Financial Institutions such as BDL (Lebanon), CCG (Morocco)**	- Funding early stage innovation projects. The adequate measures can take different forms such as financing fast prototyping labs or creating dedicated funds for these highly risky and uncertain but critical innovation projects	Supporting most risky and uncertain stage of the entrepreneurship process	**In reference to Goal 8:** - This policy promotes inclusive and sustainable economic growth. - This policy supports productive activities through access to financial services, as indicated in Target 8.3.
		- Subsidizing the purchase by SMEs and Industries of an	Supporting access to finance	

		innovation. This is similar to the subsidies of renewable energies for environment protection.		
		- Establishing an entity to support early stage innovation	Fostering the financial ecosystem	
7.	**Ministries of Industry**	Tax incentives law that can take different forms including tax credits, special allowances, special exemptions and accelerated depreciation	Supporting the demand side of innovation	**In reference to Goal 9:** - This policy promotes sustainable economic productivity. **In reference to Goal 12:** - This policy also strengthens the scientific and technological capacity, allowing Arab countries to move towards more competitive patterns of production, as indicated in Target 12.a.
8.	**Various State Actors**	- Encouraging the culture of entrepreneurship and creativity in schools by adopting non-conventional educational methods	Strengthening the entrepreneurial culture	**In reference to Goals 4 and 17:** - These policies contribute collectively in promoting lifelong opportunities for all, through entrepreneurship education, that will, in turn, help promote decent employment. - Moreover, building the institutional capacity of governmental entities towards M&E at all stages of the entrepreneurial process equally strengthens the means implementation of these SDGs, as indicated via Goal 17.
		Preparing procurement policies to catalyze local start-ups	Supporting the demand side of the entrepreneurial ecosystem	
		- Strengthening institutional capacity for M&E - Integrating M&E in every stage of the process	Defining systemic measures at the state level	

13. Bibliography

Agrytech. (2017, July 19). *Apply to the Future Agro Challenge*. Retrieved July 21, 2017, from Agrytech - Agri-Food Accelerator: http://agrytech.org/fac/

Aqrabawi, A. F. (2017, May 16). *Why Jobless Arab Youth Need Schooling in Entrepreneurship.* Retrieved July 14, 2017, from World Economic Forum - MENA: https://www.weforum.org/agenda/2017/05/why-jobless-arab-youth-need-schooling-in-entrepreneurship/

Arabian Business. (2016, February 26). *GCC Healthcare Sector Forecast to Grow to $71bn Market by 2020*. Retrieved December 02, 2017, from Arabian Business: http://www.arabianbusiness.com/gcc-healthcare-sector-forecast-grow--71bn-market-by-2020-621929.html

ArabNet Business Intelligence. (2017). State of Digial Investments in MENA 2013-2016. Retrieved November 20, 2017, from http://www.sme.ae/StudiesAndResearchDocument/State-of-Digital-Investment-in-MENA-2013-2016.pdf

AUB. (2015, December 11). *AUB's TAMAM launches the First Educational Reform Hub in Lebanon*. Retrieved July 10, 2017, from AUB-News: https://www.aub.edu.lb/news/2015/Pages/tamam-hub.aspx

AUB. (2017a). *Center for Research and Innovation*. Retrieved July 10, 2017, from AUB-Office of Grants and Contracts: http://www.aub.edu.lb/ogc/Pages/crinn.aspx

AUB. (2017b). *Services*. Retrieved July 10, 2017, from AUB-Office of Grants and Services: http://www.aub.edu.lb/ogc/Pages/Services.aspx

Berytech. (2016, November 09). *Riego Is On A Roll!* Retrieved September 13, 2017, from Berytech - News: http://berytech.org/riego-is-on-a-roll/

Berytech. (2017a). *About the Program*. Retrieved July 11, 2017, from Agrytech - Agri-Food Accelerator: http://agrytech.org/about/

Berytech. (2017b, June 21). *Berytech and Michel Issa Foundation Sign MOU to Create a Business Innovation Center in Amchit*. Retrieved July 11, 2017, from Berytech - News: http://berytech.org/berytech-michel-issa-foundation-local-development-sign-memorandum-understanding-create-business-innovation-center-amchit/

Berytech. (2017c, July 17). *Berytech Signs MOU With Ministry Of Economy & Trade to Support Lebanese SMEs*. Retrieved July 21, 2017, from Berytech - News: http://berytech.org/berytech-signs-mou-ministry-economy-trade-support-lebanese-smes/

Berytech. (2017d, July 03). *Berytech Brings THE NEXT SOCIETY Movement to Lebanon*. Retrieved July 21, 2017, from Berytech - News: http://berytech.org/berytech-participates-next-society-movement-support-innovation-mediterranean/

Bpifrance - Le Hub. (2017). *Manifesto*. Retrieved August 23, 2017, from Bpifrance - Le Hub: http://www.bpifrance-lehub.fr/manifesto/

Bpifrance - Le Lab. (2017). *Qui Sommes-Nous?* Retrieved August 23, 2017, from Bpifrance - Le Lab: https://www.bpifrance-lelab.fr/Qui-Sommes-Nous

Bpifrance. (2017). *Qui sommes-nous - Notre Mission*. Retrieved August 23, 2017, from Bpifrance: http://www.bpifrance.fr/Qui-sommes-nous/Notre-mission

BRIC. (2016). *National Innovation System in Lebanon: A System Approach for Gap Analysis and Preliminary Recommendations.* Beirut: Beirut Research and Innovation Center.

British Council. (2017, February). *Empowering Young Social Entrepreneurs in Northern Morocco*. Retrieved October 23, 2017, from British Council: https://www.britishcouncil.org/partner/international-development/news-and-events/empowering-young-social-entrepreneurs-northern-morocco

Costescu, M. (2016). *Romania's Tech Ecosystem.* Bucharest: Invest Romania. Retrieved September 7, 2017, from http://investromania.gov.ro/web/wp-content/uploads/2016/07/ITC_High-tech-startups_EN.pdf

Dare Inc. (2017). *Programs*. Retrieved October 23, 2017, from Dare Incubator - MCISE: http://dareinc.mcise.org/programme/

Donier, F. (2015, August 27). Global Start-up Ecosystem Ranking 2015. Retrieved December 26, 2017, from https://www.slideshare.net/fdonier/global-startup-ecosystemranking2015

Edmond, C. (2017, June 20). *The Number of Displaced People in the World Just Hit a Record High*. Retrieved December 02, 2017, from World Economic Forum: https://www.weforum.org/agenda/2017/06/there-are-now-more-refugees-than-the-entire-population-of-the-uk/

El Amine, Y. (2017, June 14). Lebanon Start-ups Attracting Strong Percentage of Regional Investments. *Annahar Newspaper - Online*. Beirut. Retrieved December 26, 2017, from https://en.annahar.com/article/601358-lebanon-startup-smes-attracting-strong-percentage-of-regional-investment

ENACTUS. (2017). *Impact*. Retrieved October 23, 2017, from ENACTUS Morocco: https://www.enactus-morocco.org/nos-realisations/

Endeavor. (2016). *High-Impact Entrepreneurship*. Retrieved July 25, 2017, from http://c.ymcdn.com/sites/ande.site-ym.com/resource/collection/9B119921-E6F5-4BFA-9496-575BE01C6423/Introduction_to_Endeavor.pdf

ESA. (2017). *About ESA - Introduction*. Retrieved October 02, 2017, from ESA: https://www.esa.edu.lb/en/Introduction

Feld, B. (2012). *Startup Communities: Building an Entrepreneurial Ecosystem in Your City.* Hoboken: John Wiley & Sons.

Fransabank. (2017, June 14). Fransabank supports the educational sector and offers grants and cash prizes. *Press Release*. Beirut, Lebanon: Fransabank.

Freifer, R. (2017, November 08). *The MENA Embraces More Healthtech Advancements*. Retrieved December 02, 2017, from Wamda: https://www.wamda.com/memakersge/2017/11/mena-embraces-healthtech-advancements

Gangi, Y. A. (2015). Entrepreneurship Education in Sudan. *Journal for International Business and Entrepreneurship Development, 08*(03), 18. Retrieved December 02, 2017, from https://www.researchgate.net/publication/265552386_Entrepreneurship_education_in_Sudan

Garner, S. (2017, January 21). *7 Types of Entrepreneurs*. Retrieved July 13, 2017, from Canadian Entrepreneur Training - Go Forth Institute Canada: http://canadianentrepreneurtraining.com/7-types-of-entrepreneurs/

Hoel, A. (2014, January 27). *Education in the Middle East and North Africa*. Retrieved December 02, 2017, from World Bank: http://www.worldbank.org/en/region/mena/brief/education-in-mena

INJAZ Al-Arab. (2014). *Annual Report 2014-2015: Empowering A Generation.* Retrieved December 0`2, 2017, from http://www.injazalarab.org/wp-content/uploads/2015/12/2015-AR-SCREEN-DPS-DEC20153.pdf

INJAZ Al-Arab. (2015). *Entrepreneurial Compass: Your Guide to Start-ups and Funding in the MENA Region.* INJAZ Al-Arab and Boeing. Retrieved December 02, 2017, from http://www.injazalarab.org/wp-content/uploads/2016/02/EXECUTIVE-SUMMARY-Entrepreneurial-Compass-Boeing-Study.pdf

INJAZ Al-Maghrib. (2017). *Company Program*. Retrieved October 23, 2017, from INJAZ Al-Maghrib: http://injaz-morocco.org/en/programme/company-program/

International Trade Administration. (2017, August 23). *Lebanon - Legal Regime*. Retrieved September 28, 2017, from International Trade Administration: https://www.export.gov/article?id=Lebanon-Transparency-of-the-Regulatory-System

Isenberg, D. (2010, June). *The Big Idea: How to Start an Entrepreneurial Revolution.* Harvard Business Review. Retrieved December 04, 2017, from https://hbr.org/2010/06/the-big-idea-how-to-start-an-entrepreneurial-revolution

Isenberg, D. (2011, May 11). The Entrepreneurship Ecosystem Strategy as A New Paradigm for Economic Policy: Principles for Cultivating Entrepreneurship. Retrieved December 04, 2017, from Babson Global: http://entrepreneurial-revolution.com/2011/05/11/the-entrepreneurship-ecosystem-strategy-as-a-new-paradigm-for-economic-policy-principles-for-cultivating-entrepreneurship/

Jalbout, M. (2015, May 21). *How Can the Middle East Close Its Education Gap?* Retrieved from World Economic Forum: https://www.weforum.org/agenda/2015/05/how-can-the-middle-east-close-its-education-gap/

Jawad, R. (2015). *Social Protection and Social Policy Systems in the MENA Region: Emerging Trends.* UNDESA. Retrieved December 02, 2017, from http://www.un.org/esa/socdev/csocd/2016/RJawad-MENA.pdf

Khalidi-Byhum, R. (2000). *Poverty Policy in Jordan and Lebanon.* ESCWA.

La French Tech. (2017a). *Qu'est-ce que la French Tech ?* Retrieved August 24, 2017, from La French Tech: http://www.lafrenchtech.com/la-french-tech/quest-ce-que-la-french-tech

Mazzucato, M. (2011). *The Entrepreneurial State.* Domos UK. Retrieved December 04, 2017, from https://www.demos.co.uk/files/Entrepreneurial_State_-_web.pdf

MCINET. (2017). *Morocco SME*. Retrieved October 23, 2017, from Ministry of Industry, Investment, Trade and Digital Economy: http://www.mcinet.gov.ma/~mcinetgov/en/content/morocco-sme

Ministry of Economy and Trade - UNDP. (2014). *Lebanon's SME Strategy: A Roadmap to 2020.* Beirut, Lebanon: Ministry of Economy and Trade.

Moghadam, V. M., & Decker, T. (2010). *Social Change in the Middle East.* Retrieved December 02, 2017, from http://nuweb8.neu.edu/advance/legacy/wp-content/uploads/Moghadam-and-Decker.pdf

Mottaghi, L. (2014, August 25). *The Problem of Unemployment in the Middle East and North Africa Explained in Three Charts*. Retrieved December 02, 2017, from World Bank: http://blogs.worldbank.org/arabvoices/problem-unemployment-middle-east-and-north-africa-explained-three-charts

Nhairy, S. (2016, February 14). *The Changing Face of Entrepreneurship in Morocco*. Retrieved October 23, 2017, from Entrepreneur Middle East: https://www.entrepreneur.com/article/270651

OECD. (2016). *Regulatory Policy in Chile: Govenment Capacity to Ensure High-Quality Regulation.* Paris, France: OECD Publishin. Retrieved December 02, 2017, from http://www.economia.gob.cl/wp-content/uploads/2017/03/01-Chile-Review-OCDE.pdf

Price, R. W. (2011, February 04). *What is the History of Entrepreneurship?* Retrieved July 13, 2017, from Global Entrepreneurship Institute - Global Community for Advanced Studies on Entrepreneurship: https://news.gcase.org/2011/02/04/what-is-the-history-of-entrepreneurship/

Regalado, A. (2013, July 01). In Innovation Quest, Regions Seek Critical Mass. (84-86, Ed.) *MIT Technology Review, 116*(5). Retrieved December 04, 2017, from https://www.technologyreview.com/s/516501/in-innovation-quest-regions-seek-critical-mass/

Riyada - Oman. (2015). *Entrepreneur Card*. Retrieved December 15, 2017, from Riyada: https://riyada.om/en-us/services/Pages/Entrepreneur-Card.aspx

Riyada. (2017). *Youth Innovation Summer Program 15+*. Retrieved July 11, 2017, from Riyada Innovation: http://riyadainnovation.com/course/youth/youth_innovation_summer_program/

Saleh, H. A. (2014). The Perceptions of the Lebanese Students of Choosing their Career in Entrepreneurship. *Jordan Journal of Business Administration, Volume 10, No. 2,* 333-365.

Samir, C. (2017, August 02). *Entrepreneurial, Creative, Sceptical: The Truth about MENA Millennials*. Retrieved from World Economic Forum: https://www.weforum.org/agenda/2017/08/everything-you-need-to-know-about-mena-millennials/

Silva, J., Levin, V., & Morgandi, M. (2012). *The Way Forward for Social Safety Nets in the Middle East and North Africa.* World Bank. Retrieved December 02, 2017, from http://documents.worldbank.org/curated/en/462881468052823731/pdf/NonAsciiFileName0.pdf

StartUp Maroc. (2017). *About*. Retrieved October 23, 2017, from StartUp Maroc: https://startupmaroc.org/a-propos/

Startup Megaphone. (2016). *Startup Guide Lebanon.* Beirut: BDL Accelerate 2016.

Sulaiman, M., Abdallah, A., & Othman, N. (2014, January). Malaysian Innovation Ecosystem: A Review of the Literature. *Journal of Advanced Manufacturing Technology, 8*(1), 13. Retrieved September 6, 2017

The Research Council Oman. (2016). *National Innovation Policy*. Retrieved November 08, 2017, from The Research Council Oman: https://www.trc.gov.om/trcweb/sites/default/files/2017-04/Annual_Report_2016_en.pdf

TheFamily. (2017). *About*. Retrieved August 22, 2017, from TheFamily: https://www.thefamily.co/about

U.S.- MEPI. (2017a). *What We Do*. Retrieved October 23, 2017, from U.S.-Middle East Partnership Initiative (MEPI): https://mepi.state.gov/about-mepi/what-we-do/

U.S.-MEPI. (2017b). *Morocco's Entrepreneurship Startup Ecosystem Blossoms*. Retrieved October 23, 2017, from U.S.-Middle East Partnership Initiative (MEPI): https://mepi.state.gov/moroccoecosystem/

UN General Assembly. (2015, October 21). *Transforming Our World: The 2030 Agenda for Sustainable Development (A/RES/70/1)*. Retrieved July 17, 2017, from Sustainable Development Knowledge Platform: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

UNCTAD. (2012). *Entrepreneurship Policy Framework and Implementation Guidance.* United Nations Conference on Trade and Development. Retrieved December 02, 2017, from http://unctad.org/en/PublicationsLibrary/diaeed2012d1_en.pdf

Valerio, A., Parton, B., & Robb, A. (2014). *Entrepreneurship Education and Training Programs around the World: Dimensions for Success.* Washington: DC: World Bank.

Wamda. (2017a, May 23). *Lebanon's Circular 331: The Birth of an Industry*. Retrieved September 11, 2017, from Wamda: https://www.wamda.com/2017/05/lebanons-bdl-circular-birth-industry

Wamda. (2017b, May 23). *Lebanon's Digital Industry: The Battle of BDL Circulars*. Retrieved September 11, 2017, from https://www.wamda.com/2017/05/lebanons-digital-industry-battle-bdl-circulars

Wan Jan, W. (2011). Malaysia's New Economic Model: Is the Malaysian government serious about economic liberalisation? *14*, 36. Retrieved September 6, 2017

WEF/INSEAD/Cornell University. (2016). *The Global Information Technology Report 2016: Innovating in the Digital Economy.* Retrieved November 07, 2017, from http://www3.weforum.org/docs/GITR2016/WEF_GITR_Full_Report.pdf

WIPO-INSEAD-Cornell University. (2017). *The Global Innovation Index 2017.* Geneva, Switzerland. Retrieved September 6, 2017

World Bank. (2017a). *Igniting Climate Entrepreneurship in Morocco: Finding from the Climate Entrepreneurship and Innovation Ecosystem Diagnostic.* World Bank Group. Retrieved October 23, 2017, from http://documents.worldbank.org/curated/en/133881493719194269/pdf/114718-WP-PUBLIC-1-5-2017-17-4-3-moroccoceedApril.pdf

World Bank. (2017c). Access to Finance: Gaps and Recommendations. *Lebanon SME Forum 2017* (p. 14). Beirut: World Bank Group.
World Bank. (2017e). Doing Business: Data - Lebanon. Retrieved November 09, 2017, from http://www.doingbusiness.org/data/exploreeconomies/lebanon#starting-a-business
World Bank. (2017f). Business Reforms in Lebanon - Doing Business. Retrieved November 09, 2017, from http://www.doingbusiness.org/reforms/overview/economy/lebanon
World Bank. (2017g). *World Bank - Data for Middle Income, Arab World*. Retrieved December 02, 2017, from World Bank: https://data.worldbank.org/?locations=XP-1A
World Economic Forum. (2011). *Accelerating Entrepreneurship in the Arab World*. Retrieved December 02, 2017, from World Economic Forum: http://www3.weforum.org/docs/WEF_YGL_AcceleratingEntrepreneurshipArabWorld_Report_2011.pdf
World Economic Forum. (2014). *Entrepreneurial Ecosystems Around the Globe and Early Stage Company Growth Dynamics.* Geneva, Switzerland: World Economic Forum. Retrieved November 06, 2017, from http://reports.weforum.org/entrepreneurial-ecosystems-around-the-globe-and-early-stage-company-growth-dynamics/wp-content/blogs.dir/34/mp/files/pages/files/nme-entrepreneurship-report-jan-8-2014.pdf
World Economic Forum. (2016). *Global Competitiveness Report 2016-2017* . Geneva, Switzerland: World Economic Forum.
World Economic Forum. (2017). *The Global Human Capital Report 2017: Preparing People for the Future of Work.* World Economic Forum. Retrieved November 07, 2017
World Economic Forum. (2017a). *The Future of Jobs and Skills in the Middle East and North Africa: Preparing the Region for the Fourth Industrial Revolution.* World Economic Forum. Retrieved November 07, 2017, from http://www3.weforum.org/docs/WEF_EGW_FOJ_MENA.pdf
Yammouri, N. (2010). *Poverty in the Middle East and North Africa.* World Bank. Retrieved December 02, 2017, from http://siteresources.worldbank.org/INTMNAREGTOPPOVRED/Resources/MNA_Poverty_EN_Final.pdf