



Funded by the European Union



## **IDAL INNOVATION CLUSTER**

Strategy for an innovation cluster development in Beirut

30 August 2019

## Contents

<b>1- Introduction .....</b>	<b>4</b>
<b>2- Market study .....</b>	<b>4</b>
<b>2.1- GDP and GDP per capita .....</b>	<b>4</b>
<b>2.2- Lebanese debt, revenues and expenditures .....</b>	<b>5</b>
<b>2.3- Foreign direct investment .....</b>	<b>6</b>
<b>2.4- Trade balance .....</b>	<b>7</b>
<b>2.5- Lebanese population .....</b>	<b>8</b>
<b>2.6- Unemployment and emigration .....</b>	<b>8</b>
<b>2.7- Future plans of the Lebanese government .....</b>	<b>10</b>
<b>2.8- Competitive advantages .....</b>	<b>11</b>
<b>2.8.1- Lebanon competitive advantages .....</b>	<b>11</b>
<b>2.8.2- Beirut competitive advantages .....</b>	<b>14</b>
<b>3- Benchmarking analysis/ case studies .....</b>	<b>15</b>
<b>Beirut Digital District .....</b>	<b>16</b>
<b>Berytech .....</b>	<b>18</b>
<b>Knowledge And Innovation Center .....</b>	<b>20</b>
<b>Dubai Internet City .....</b>	<b>22</b>
<b>Dubai Silicon Oasis .....</b>	<b>24</b>
<b>Dubai Technopark .....</b>	<b>26</b>
<b>DuBiotech .....</b>	<b>28</b>
<b>Qatar sciences and technology park .....</b>	<b>30</b>
<b>King Hussein business park .....</b>	<b>32</b>
<b>Information technology and communication complex .....</b>	<b>34</b>
<b>Smart Villages .....</b>	<b>36</b>
<b>Casablanca Technopark .....</b>	<b>38</b>
<b>Rabat Technopolis .....</b>	<b>40</b>
<b>Technopark Istanbul .....</b>	<b>42</b>
<b>ODTÜ Teknokent .....</b>	<b>44</b>
<b>Gav-Yam Negev Park .....</b>	<b>46</b>
<b>Matam Park .....</b>	<b>48</b>
<b>Bar-Lev High Tech Park .....</b>	<b>50</b>
<b>Inovallée .....</b>	<b>52</b>

Singapore-Sichuan Hi-Tech Innovation Park.....	54
Silicon Fen .....	56
Silicon Docks .....	58
3.1- Lessons Learned.....	60
3.2- Competitive landscape .....	66
4- Stakeholders consultation findings .....	70
4.1- Sectors.....	76
4.1.1- Sectors filtering .....	76
4.1.2- Sectors evaluation across the different Lebanese governorate .....	83
4.1.3- Sectors overview .....	85
4.1.4- Prospect tenants .....	100
5- Concept and recommendations .....	102
5.1- Foundation.....	102
5.2- Pillars.....	102
5.2.1- Scale.....	102
5.2.2- Tenants .....	103
5.2.3- Hard infrastructure .....	103
5.2.4- Soft infrastructure.....	104
5.2.5- Urban development .....	105
5.2.6- Privileges .....	105
5.3- The marketing concept.....	108
5.3.1- Appeal to tenants.....	108
5.3.2- The technological theme.....	109
5.3.3- Creative theme .....	109
5.4- Operating model.....	111
5.5- Legal and regulatory framework.....	118

## 1- Introduction

Under the Technical Assistance Facility program funded by the European Union to the Government of Lebanon, IDAL is working in partnership with Crown Agents and OMSAR to launch a Digital Innovation Cluster project.

This project will follow international standards and will act as a platform of collaboration between the government, the private sector and academics.

The aim of the project is to attract investments to Lebanon by providing local, regional and international companies an appropriate professional atmosphere.

This could be done by enhancing the available infrastructure (data& telco and utilities), by improving laws and by providing economic incentives to the companies working in this cluster.

A two-phased approach will be used for the development of the plan. The first phase will be a concept ideation in order to develop the project's concept and the different sectors targeted by this project.

The second phase will be a financial feasibility for the cluster.

## 2- Market study

### 2.1- GDP and GDP per capita

Before 2010 Lebanon's GDP growth exceeded the global one, after this year Lebanon's GDP has been stagnant.

Lebanon GDP is expected to reach USD 74 billions in 2024, however its year to year growth is smaller than the global one. Figure 2 shows the Lebanese GDP and a comparison between its growth and the global one from 2014 till present and a projection for the future (2024).

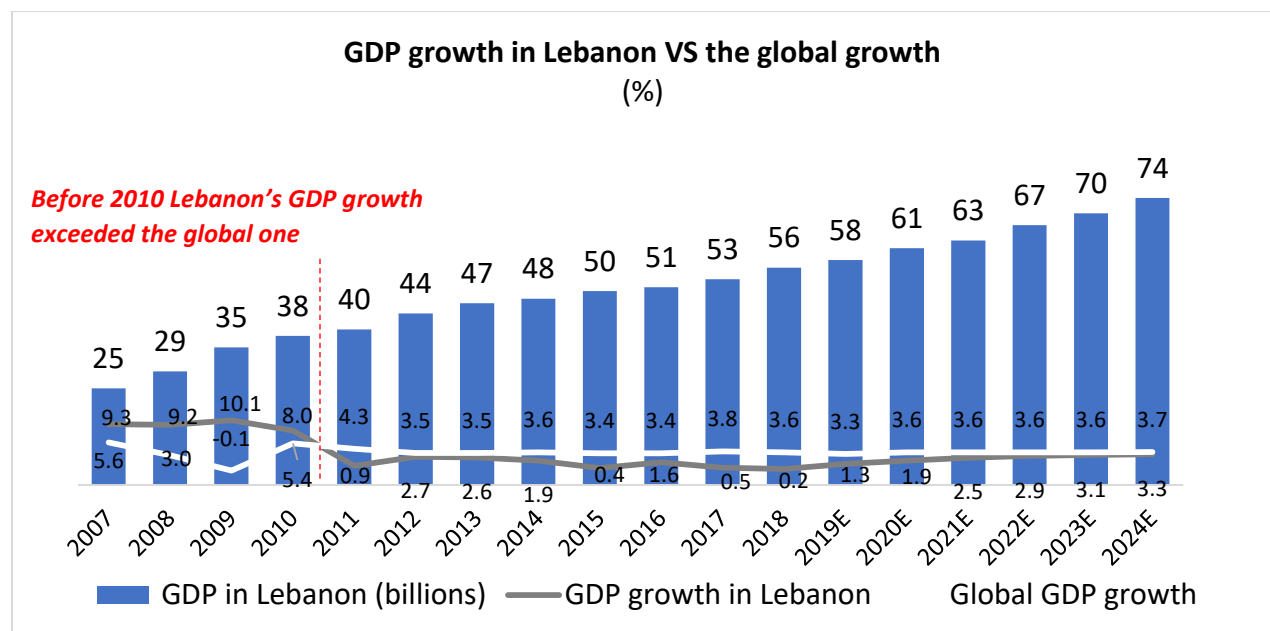


Figure 1. GDP growth in Lebanon vs the global growth (%)

Real estate revenues constitute the highest contribution to the Lebanese GDP with a percentage of 15% followed by education and health services with 14% and commercial trade with 13%. Figure 3 shows the contribution of the different sectors to the Lebanese GDP.

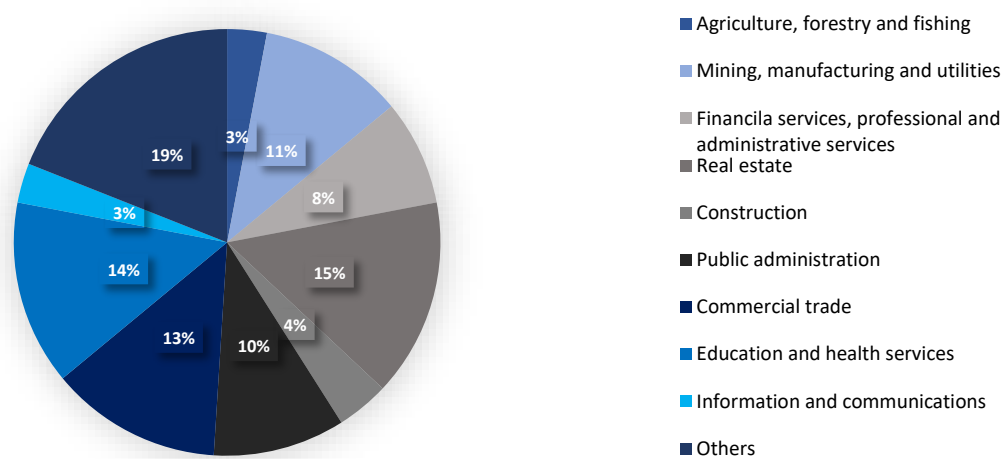


Figure 2.GDP composition by sector (%)

By comparing Lebanon GDP per capita to other countries that had the same number in 1980, it is seen that Lebanon GDP per capita has decreased by 5% whereas Korea’s GDP per capita has increased by 700% and Singapore by 460%. All those numbers are presented in figure 4.

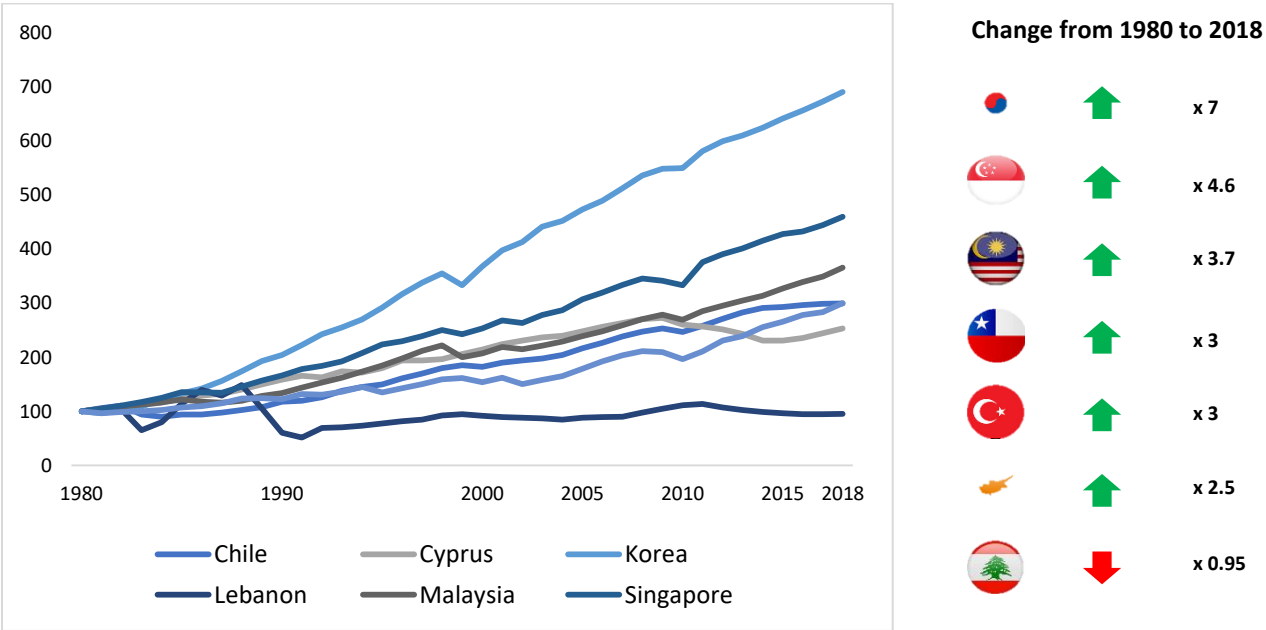


Figure 3.GDP per capita evolution between 1980 and 2018

### 2.2- Lebanese debt, revenues and expenditures

Lebanese debt is expected to increase to 128 USD billions after reaching 85 USD billions in 2018 if no solutions are proposed to propel the stagnant economic situation. The gross debt percentage of the GDP

is expected to reach 173% in 2024 which constitutes a serious threat for the Lebanese economy. Figure 5 shows the evolution of the Lebanese debt and gross debt percentage from 2014 till present and a projection for year 2024.

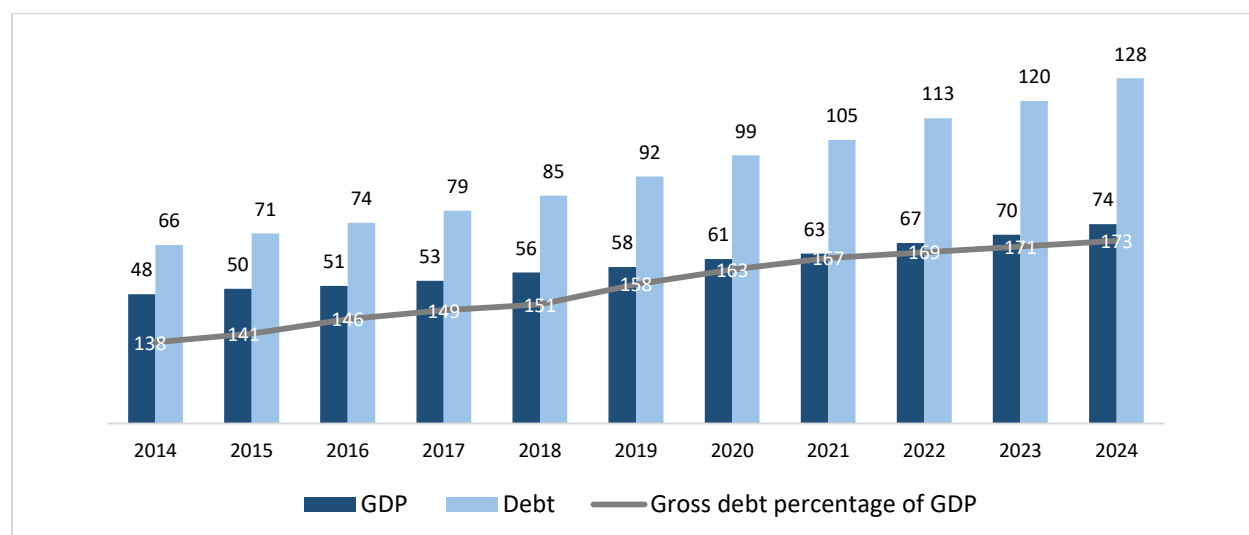


Figure 4. Lebanese debt evolution (USD billions) (% of GDP)

After examining the government revenues in 2016 it is noticed that out of the 9.9 USD billions, 71% comes from taxes, 23% are non-tax revenues and 6% receipts. It is noticed that taxes constitute the highest revenue for the Lebanese government, which constitutes only 20% of the GDP.

On the other side, the government expenditures in 2016 were 14.9 USD billions higher than its revenues. Wages and salaries constituted the biggest portion with 33%, the other expenditures were distributed as follow: 32% as interest payments, 24% as operational expenditures, 6% to cover the deficit of EDL and only 5% for capital expenditures.

### 2.3- Foreign direct investment

Even though the Lebanese economic situation is deteriorating, FDI inflows to Lebanon are recovering which reflects the continuous trust of the Lebanese diaspora and the foreign investors. FDI increased from 2.52 USD billions in 2017 to 2.88 USD billions in 2018.

By investigating the aimed sectors for the FDI inflows, it is seen that real estate took the highest portion and Syrians and Saudis are the top foreign real estate investors. Figure 6 shows the breakdown of FDI by type of investment in Lebanon.

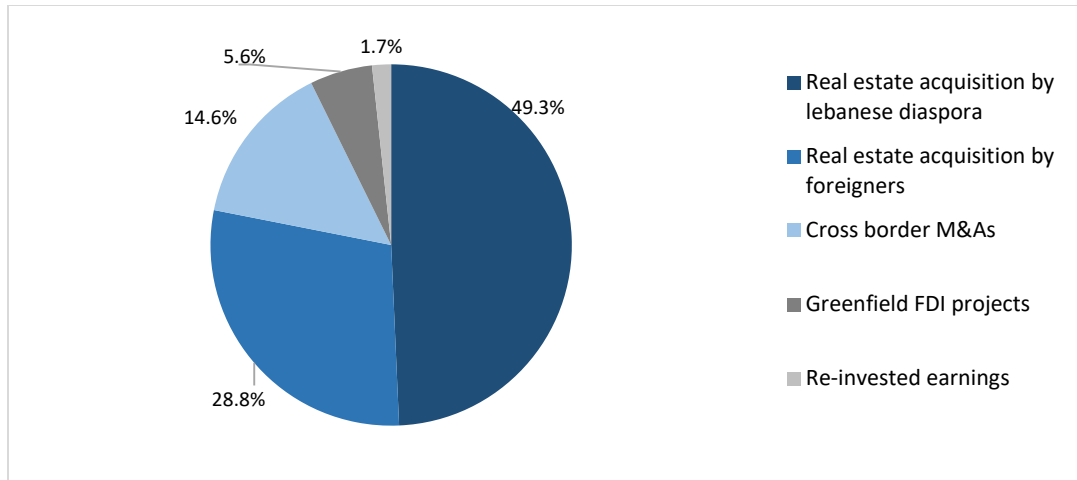


Figure 5. Breakdown of FDI by type of investment in Lebanon (%)

In 2018 Trade, real estate and services companies constituted 50% of the foreign companies in Lebanon (18% trade, 16% real estate and 16% services) and the majority (51%) of those companies were European followed by 29% for companies having origins from the middle east and north Africa.

## 2.4- Trade balance

By examining the imports and exports values for the past 5 years, it is seen that Lebanon's trade balance has been in a large deficit for this period due to a large gap between imports and exports.

All those numbers are shown in figure 7.

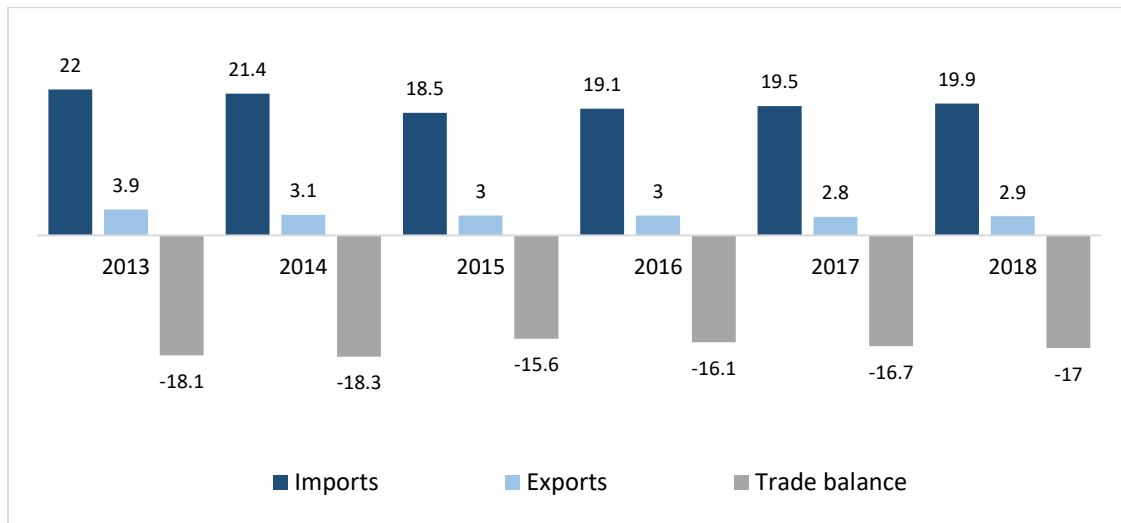


Figure 6. Lebanon's trade balance (USD billions)

By digging deep in the import's composition in 2018, it is seen that mineral products constitute the biggest portion with 21% followed by machinery and electrical equipment with 12% and chemical products with 12%.

Whereas pearls, precious stones and metals constituted the highest portion of the exports in 2018 with a percentage of 22%, followed by 13% for food and beverages and 13% for metal products.

## 2.5- Lebanese population

Lebanese population increased at 1% CAGR between 2006 and 2010, to reach 4.3 millions in 2010. After the Syrian refugee's crisis, the Lebanese population growth jumped from 1% to 4% between 2011 and 2019 and it is expected to decrease at (-1%) to reach 5.7 millions in 2024.

By dividing the population into age groups, it is noticed that the majority of the Lebanese population is adult with 44.79% of the population between 25 to 54 and more than 52.7% in the working age.

Figure 8 shows the age distribution of the Lebanese population.

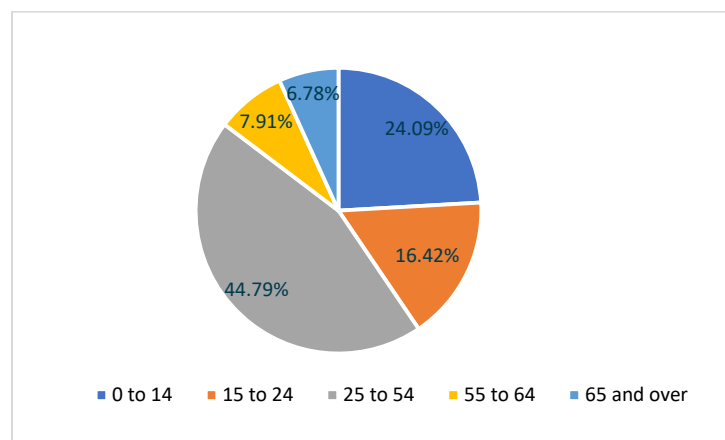


Figure 7. Lebanese population distribution by age groups (%)

## 2.6- Unemployment and emigration

Despite the absence of official data, McKenzie estimated an unemployment rate between 15% to 25% in 2017, compared to 9% between 2011 and 2012. This led to an increase in the number of yearly emigrants to reach 50,000 between 2008 and 2011 and 57,000 are expected to emigrate in 2019.

The majority of the Lebanese emigrants are in the workforce range age as seen in figure 9.



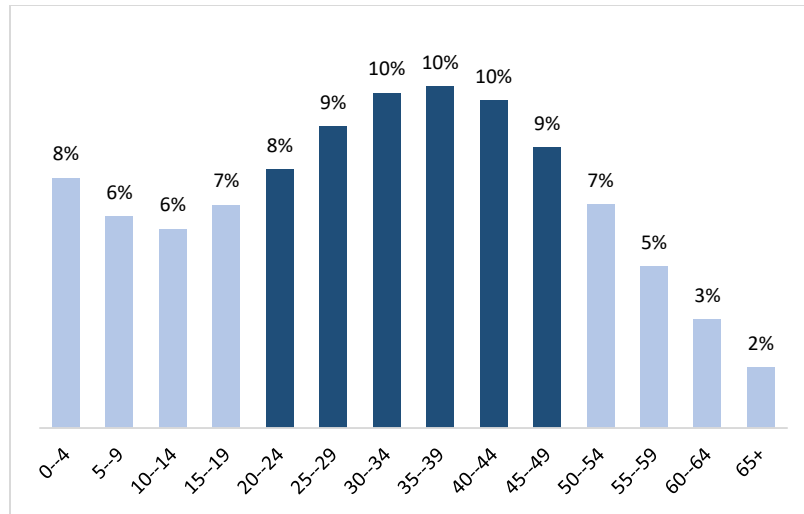


Figure 8. Age distribution of the Lebanese emigrants

Lebanon is losing each year the elite of his working force, on the other hand Lebanon is receiving unskilled foreign labor (Syrian refugees, Palestinian, Egyptian....).

Figure 10 highlights the number of Lebanese emigrants in some regional and international countries.

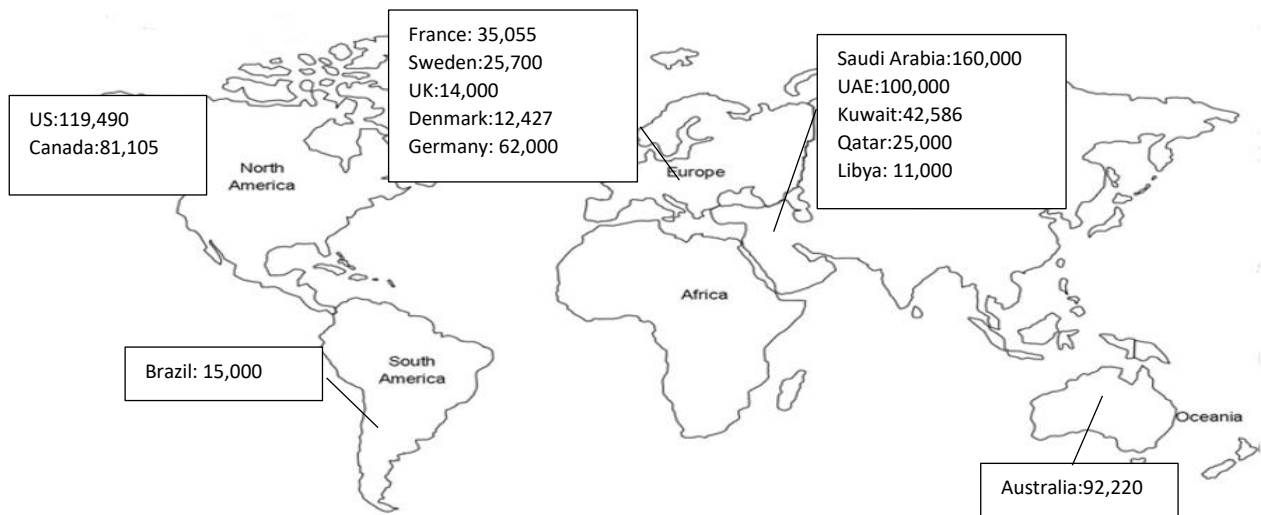


Figure 9. Number of Lebanese emigrants in some regional and international countries

Out of the 1.2 million of the total Lebanese residents abroad, 45% works, 23% have university degrees and 6% have knowledge in the ICT sector. The 275,400 living abroad that have university degrees are divided into five majors as shown in figure 11.

Based on the expected number of emigrants in 2019, the number of persons that will emigrate with knowledge in ICT will reach 3,250.

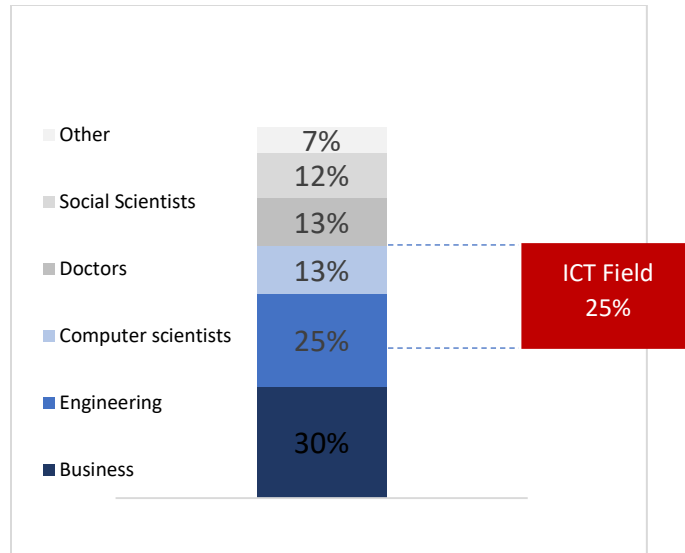


Figure 10. Distribution of the Lebanese emigrants by majors

## 2.7- Future plans of the Lebanese government

In order to solve the complex economic problems, the government started by developing an economic vision for Lebanon. On October 20<sup>th</sup>, 2017, the Council of Ministers approved the launch of a study aimed at setting a vision for Lebanon's economy under the title "Lebanon's economic vision, and ways to achieve it".

The vision would aim to grow GDP and create jobs through selecting productive sectors that could become competitive and understand the government's role in that regard.

At the same time, the government has been trying to take soft loans through CEDRE conference.

The conference was hosted by France on 6 April 2018 and 37 countries and 14 international and regional organizations took part in the meeting, with some representatives from the private sector and from the civil society.

The Conference aimed at developing the Lebanese economy, mainly by financing the Capital Investment Program (CIP) of the Lebanese government, and by supporting monetary and fiscal stability.

It allocated nearly USD 11.6 billion in financial support to Lebanon, which was distributed as follows:

- USD 10.8 billion in loans, of which 93% is in the form of soft loans
- USD 800 million in grants, including grants to support loans' interest payments

The government has pledged to implement radical reforms in a bid to reduce the mounting budget deficit and to implement the CEDRE measures.

It was recommended to set up an innovation cluster that would greatly benefit Lebanon across three different dimensions:

- **Support GDP Growth:** This innovation cluster will propel the GDP growth in Lebanon by creating new revenue streams and jobs in the Lebanese economy

- **Encourage FDI:** The development of this innovation cluster will increase the foreign direct investment in Lebanon and will provide foreigners with additional investment opportunities outside the real estate sector
- **Reduce Emigration:** This innovation cluster will create new jobs in different sectors and will help to decrease the emigration of the skilled Lebanese working force

## 2.8- Competitive advantages

We will start by studying Lebanon's competitive advantages than we will outline Beirut competitive advantages.

### 2.8.1- Lebanon competitive advantages

Lebanon has a big set of competitive advantages among the region, that includes:

- **High Quality of Education**

Lebanon has one of the best educational systems in the MENA region and ranks **18<sup>th</sup>** in terms of quality and even more notable in quality of math and science which ranks **5<sup>th</sup>** in the region. Also, the majority of the labor force is trilingual

- **Strong Financial System**

The banking system is one of the strongest in the region due to several factors like pegged currency, tight regulations, high deposits-to-GDP ratio, and banking secrecy.

- **Entrepreneurial Landscape**

Lebanon is known for its compelling entrepreneurial drive dominated by SMEs which represent more than 90% of enterprises employing around 70% of the workforce. This landscape is backed up by funding initiatives from banks and the private sector.

- **Backup Support from the Diaspora**

Lebanon has been receiving constant support from its large network of expatriates which ranks **10<sup>th</sup>** among 125 developing countries and **2<sup>nd</sup>** in the MENA region. In 2017, Lebanon received \$ 9B from its diaspora.

- **Highly Creative Society**

The Lebanese people have been internationally recognized for their creativity and design capabilities. They shaped a remarkable Lebanese identity which vitalized their culture and spread it across the globe through innovative ideas and products.

- **Reputable Healthcare System**

Lebanon has always been one of the leading healthcare systems in the region due to its advanced medical practice with hospitals being dominated by the private sector. Also, Lebanon is home to a very high physician per thousand capita ratio.

- **Competitive Labor Cost**

The labor base is relatively cheaper than the US, Europe and GCC countries which highly advantageous. For example, the average wage of a software engineer nearly 37% lower than in the GCC and 60% lower than in selected developed economies

- **Access to Growing Regional Markets**

Lebanon's access to expanding emerging markets presents significant opportunities. These markets include the Arab World, Africa, and Europe mainly.

A list of criteria is used to assess Lebanon's competitive advantage:

- 1. Factor cost**

This factor includes the cost of Labor force, rent and cost of living.

Lebanon has lower labor cost than all GCC countries, yet some countries in the Levant region offer a better competitive advantage including Egypt, Turkey and Jordan.

At the same time Lebanon has high utilities cost and non-continuous availability of some services (electricity, internet, water) which strains FDIs.

- 2. Talent Pool**

This factor includes affiliation with local & international universities, collaboration with research institutions, access to a large talent pipeline and networking opportunities.

Lebanon has a high talent pool of labor and graduates as Lebanon enjoys the best in class institutions in the MENA region.

- 3. Legal & Regulatory Environment**

This factor includes:

- Incentives or exemptions on corporate tax, income tax, foreign currencies, etc.
- Flexible labor regulations, streamlines business procedures, licensing & registration
- Foreign ownership

Lebanon has many problems regarding this factor. There is no current implementation of any special economic zone (except port free zones) that enjoys special legal and economic incentives.

However, certain laws that allow certain commercial privileges had been developed (e.g. Investment law 360: ICT startups exempted from corporate taxes for a 10 year period).

- 4. Access to capital**

This factor includes foreign direct investments, public or private funding availability, availability of investments law if any facilitating loans, funding, venture capitals collaborations, etc

In Lebanon, Banque du Liban circular 331 stimulated local investments in start-ups, however low public funding is available due to high burden on Lebanese economy.

- 5. Access to market**

This factor includes accessibility to techparks (proximity to sea ports, airports, rail lines, etc.), market size and accessibility.

The small population and the low purchasing power in Lebanon make the local market not attractive. In addition, Lebanon has a very poor infrastructure (bad roads quality, only one civilian airport and two ports).

For those reasons, the establishment of a techpark in Lebanon should seek to be a regional hub rather than serve the local market.

## **6. Life Environment**

This factor includes the availability of various amenities at close proximity including recreational parks, green spaces, gyms, restaurants, retail centers and entertainment activities...

Lebanon presents the best climate in the region offering convenience and ease in addition to high diversity and quality of entertainment events and activities.

A SWOT analysis was developed in order to evaluate Lebanon's strong and weak points.

**Strengths:** Lebanon presents a set of strong points compared to the regional countries:

- Highest talent pool in MENA region (ranked 4<sup>th</sup> in Science and Math worldwide)
- Banking secrecy
- Best in class life environment (best climate in region and entertainment)
- Labor cost lower than all GCC countries (Bahrain, UAE, Kuwait, Qatar, Oman, KSA)
- Trilingual country
- Lebanon is the best performer in the Arab world in economic complexity which shows the high amount of knowledge-based production

**Opportunities:** Some opportunities are available, but still need more effort to develop them:

- Potential collaboration with legal agencies to implement an attractive legal framework specific to the project that could help establishing a special free zone
- Capital promises in terms of grants and loans to the Council of Development and Reconstruction to enhance Lebanon's logistics infrastructure
- Only 2 mega incubators in Lebanon, and no fully established techpark

**Weakness:** Most of Lebanon's weaknesses are related to infrastructure and utilities problems. Some of Lebanon's weaknesses are listed below:

- Weak infrastructure in terms of logistics (weak road networks, saturated port, no rail lines)
- Discontinuous availability of utilities (electricity, water)
- High cost and low quality of utilities (internet, electricity)
- Low local market attractiveness
- Political instability
- Low access to capital
- Relatively high tax rates

**Threats:** A lot of threats need to be faced:

- Rising population due to the increase of Syrian refugees flow which strains resources
- Increase in inflation rate at a faster rate than most countries in the MENA region
- Deterioration of trade relations with oil exporting economies which can strain FDIs
- Establishment of several techparks in each country in the MENA
- Public funding of techparks and smart cities in most countries in the MENA

### 2.8.2- Beirut competitive advantages

Beirut presents a big set of advantages amongst other cities in Lebanon, that include:



Proximity to the airport: The only civil airport in Lebanon is located in Beirut



Proximity to ports: Beirut port holds the major part of trading activities in Lebanon



Talent pipeline: Most of the universities are located in Beirut (AUB, LAU, USJ, LU.....) , which constitutes an important talent pipeline



Proximity to hospitals: The most successful medical centers are present in Beirut( Hotel Dieu, Clemenceau medical center, LAU medical center.....)



Proximity to ministries: Almost of the ministries are present in Beirut which makes governmental operations easier for Beirut citizens



Proximity to hotels: The largest hotels (Hilton Beirut, Le Gray....) and recreational spaces (sports clubs, cafés....) are located in Beirut

### 3- Benchmarking analysis/ case studies

Global and regional benchmarks were used to identify key characteristics for Techparks and innovation hubs. These characteristics were grouped across 6 key dimensions:

- **Scale:** defines the size, date of establishment, location, number of jobs created, & number of companies present
- **Target Tenant Profile:** identifies the type of jobs created, sectors of operation, type of tenants, type of companies
- **Hard Infrastructure:** describes the characteristics of essential utilities and accessibility features
- **Soft Infrastructure:** identifies governmental and business services provided, source of talents, presence of incubators, and presence of accelerators
- **Urban Overview:** shows components of techpark, land allocation, special and iconic buildings, smart features
- **Privileges:** identifies laws and regulations special to the techpark, economic incentives, availability of funders

The different dimensions are summarized in figure 12.

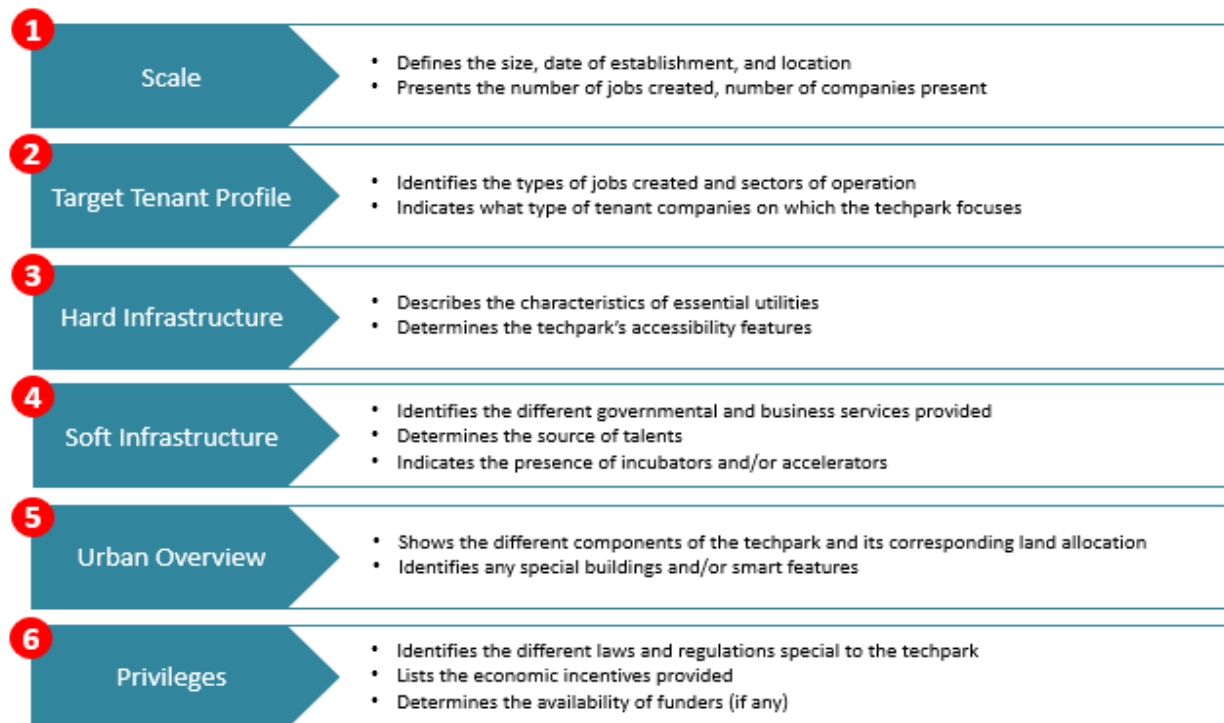


Figure 11. The characteristics identified when studying the different benchmarks



## Beirut Digital District



This project is located in Lebanon and encompasses several leading companies working mainly in the ICT sector.

**Scale:** Located in Beirut, Lebanon, Beirut Digital District (BDD) occupies an area of 17,500m<sup>2</sup>. It was established in 2012 through a partnership between ZRE, Berytech, and the Ministry of Telecommunications. It created more than 1,500 jobs and includes over 50 companies in its portfolio.

**Target Tenant Profile:** Companies in BDD focuses on engineering and development jobs in multiple sectors including:

- Digital media
- ICT
- Education
- Finance

These companies vary in size, with most of them being startups along with some SMEs and mature corporates.

Flagship companies:





**Hard Infrastructure:** BDD has a well-connected fiber optic network and 4G broadband for its data and telecommunication. Regarding the utilities, BDD boasts a permanent power supply with its own renewable power generation along with a controlled and metered water supply. BDD is also located in a very strategic spot in Beirut, where it is 10 minutes away from the international airport and 5 minutes from Beirut Sea Port.

**Soft Infrastructure:** BDD is a one-stop-shop service including a follow-up at the Ministry of Finance, municipality, social security, and payment of utility bills. The hub also provides Intellectual Property management services along with legal, auditing, and financial consulting services at reduced rates for startups. BDD is able to attract talent through a strong talent pipeline due to its proximity to Lebanon's top universities including American University of Beirut, Lebanese American University, and Universite Saint-Joseph. BDD provides strong incubation and acceleration exposure through exposure to a cluster of investors and incubators with continuous training and workshops such as UKLTH, Speed, & Berytech.

**Urban Development:** the land has many types of buildings including offices, commercial (restaurants, retail), and dedicated green spaces. There is also a plan to include hotels and residential places in the future. The buildings are primarily mid-rise buildings and high-rise to buildings are planned to be included. The buildings are mostly iconic and modern with a silver LEED certification equipped with building management systems. The hub also includes conference facilities and exhibition centers with a multitude of amenities such as fitness facilities, dining and retail, security, libraries, ATMs and banks, and medical services.



**Privileges:** BDD does not provide any special tax or regulatory incentive. However, BDD holds investment law 360 where it states that ICT startups are exempted from corporate taxes for a 10-year period. The facility also provides indirect economic incentives through Bank Du Liban's circular 331. There is also an availability of in-house venture capital through UKLTH, Speed, Leap Ventures, and B&Y Ventures.



## Berytech

Berytech is a project located in two different areas in Lebanon: Beirut and Dekwaneh. The majority of this project's tenants are ICT companies.

**Scale:** Berytech is located in Beirut, Lebanon. However, it is spread among 3 buildings, 2 of which are located in Beirut and the third located in Dekwaneh. It was established in 2002 and it is privately owned by 18 investors, 10 of which are banks. Since inception, it has created more than 1,600 jobs and includes around 140 companies across the 3 buildings.

**Target Tenant Profile:** Berytech's companies focus on engineering and development as well as professional services in many sectors such as:

- ICT
- Healthcare
- Digital media
- Gaming.

The most common company size in Berytech are startups, whereby SMEs and mature corporates are present but a minority.

Flagship companies:



**Hard Infrastructure:** data and telecommunication are available through a fiber optic cable network and an internet exchange point (IXP), which allows local traffic and is the first in Lebanon. Berytech has redundant power sources for electricity and water. Its location in Beirut City Center allows it to be close to the major arteries linking the city to its suburbs.



**Soft Infrastructure:** Berytech allows for a one-stop-shop for registration and legal services along with IP management services. It also provides a dedicated technical support team and platforms for networking, conferences, development support, access to markets, placement, and mentoring. The hub is highly integrated in the USJ ecosystem, especially engineering and medicine faculties. Also, Berytech allows for equipment and facilities rentals with continuous trainings and workshops.

**Urban Development:** Berytech buildings are composed of offices, conference facilities, and fabrication labs. Since Berytech is mainly 3 buildings not clustered together, there is minimal green spaces in them. They are mid-rise buildings with no iconic architecture. Some of the buildings are equipped with modern smart offices and high-tech facilities. They have open spaces for co-working and include various amenities such as fitness facilities, cafeteria, security, and medical services.



**Privileges:** the hub does not provide any special tax or regulatory service, but it does benefit from investment law 360 stating that ICT startups are exempted from corporate taxes for a 10-year period. Indirect economic incentives are provided through Bank Du Liban's circular 331 with an availability of in-house venture capital (Berytech Fund I, Berytech Fund II, IM Capital).



## Knowledge And Innovation Center

Knowledge and innovation center is a project located in Tripoli and still under development. Developed by a partnership between the Lebanese government and the private sector, this project will offer a large list of economic incentives to its tenants.

**Scale:** KIC covers an area of 75,000 m<sup>2</sup>. It was announced in 2008 and is still in its planning phase.

Developed through a partnership between the Lebanese government and the private sector, KIC is expected to create 5,000 jobs.



**Target Tenant Profile:** KIC is targeting many sectors including:

- Trading
- Healthcare
- ICT
- Science and engineering

The project is targeting a mixture between startups, SMEs and mature corporates.

**Hard Infrastructure:** The project's data and telecommunication are expected to be advanced and covering most communication platforms. The zone will have landlines, mobile telephone networks, fax, broadband and high-speed internet, and satellite. There will be a full commercial use of inbound and outbound voice over internet protocol (VoIP). As for electricity, the zone will have access to uninterrupted and affordable electricity with good water services and sewage collection. The project is 2 Km away from the port of Tripoli, 23 Km from Rene Mouawad airport and 30 Km from the Syrian border. In addition, the coastal highway (51 M) serves the area.

**Soft Infrastructure:** KIC is a one-stop-shop window for freight services and includes various legal services under directorate of general affairs. There is a dedicated technical support team and third-party services such as accounting, hardware and software suppliers, and IT. The project is also within close proximity to a network of schools and universities with a technical university present on campus in one of the possible locations for the project. Training programs and workshops will be available along with commercialization programs for startups.

**Urban Development:** the site will have offices, commercial buildings, a university campus (might be included), and an exposition center. There are no building models and plans yet, but it is recommended that the zone have smart features. The zone will have common facilities and amenities such as a business hotel, entertainment facilities, medical facilities, and banks.

**Privileges:** KIC will include numerous economic privileges for its occupants including:

- 100% customs exemption on imported raw material
- Duty-free export of finished goods
- 100% exemption on VAT and excise tax for goods and services destined for exports
- 100% exemption on corporate profit tax
- 100% exemption on building permit fees and built property tax
- 100% foreign ownership of companies permissible

There will also be government funding from different ministries.





## Dubai Internet City

**Scale:** Dubai Internet City was established in the year 2000 by TECOM (a Dubai holding company). It covers an area of 0.14km<sup>2</sup> and has created around 10,000 jobs through the inclusion of more than 1,600 companies.

**Target Tenant Profile:** the main job types in the DIC are sales and marketing, administrative, and professional services. The city focuses on a number of sectors mainly:

- ICT
- Financial
- Digital media.

Most of the companies in the city are mature corporates, but there is also a focus on SMEs, which are present in large numbers. Startups have very little of the share.

Flagship companies:



**Hard Infrastructure:** as its name suggests, Dubai Internet City has a very developed data and telecommunications infrastructure. It has high speed data up to 1 Gbps at low cost, there is an availability of large data centers (in partnership with IBM), coverage of all mobile operators, and commercial IP telephony network. Energy and water are supplied by DEWA, and the city has district cooling for all buildings. The city is located near Sheikh Zayed highway with a metro station within DIC perimeter. DIC is 30km away from Dubai International Airport.

**Soft Infrastructure:** government services are offered by the Government of Dubai. The setup of a company is facilitated by the business park sales office and takes around 9-12 days. Trainings and workshops are offered to the community. The American University of Dubai campus is located within DIC, and the city is close to Dubai Knowledge Park, which includes training institutes and recruitment

agencies. The In5 innovation center in the city provides incubation for ICT startups through support with setup, access to training, funding, and mentorship and networking.

**Urban Development:** the city has office spaces, commercial stores, and a hotel. It consists of primarily low and mid-rise buildings with no iconic buildings among them. However, the buildings have first generation building management systems. The city also has conference facilities, fitness facilities, dining and retail, banking and ATMs, medical facilities, security, and public safety.



**Privileges:** DIC has a special economic zone offering 100% foreign ownership, software, e-commerce, telecom and network licenses, and no currency restrictions. It is a regulated environment with full repatriation of capital and profits. There is no tax on corporate and personal income for 50 years. In5 incubator platform gathers several investors tailored for each startup.



واحة دبي للسيليكون  
DUBAI SILICON OASIS

## Dubai Silicon Oasis

Developed by the UAE government, this project has propelled the UAE economy by creating more than 6,000 jobs since inception.

**Scale:** Dubai Silicon Oasis was established in 2005 by the UAE government. It occupies an area of 7.2km<sup>2</sup> and has created more than 6,000 jobs since inception. It includes more than 2,500 companies.



**Target Tenant Profile:** the jobs created mainly focus on sales and marketing, engineering and development, and administrative. The main focus of sectors are ICT, biotechnology and healthcare, science and engineering, manufacturing, and banking and finance. Most companies in Dubai Silicon Oasis are SMEs, but there is also slight presence of mature corporates and startups.

Flagship companies:



**Hard Infrastructure:** Dubai Silicon Oasis has a converged network concept allowing data, voice, and video to be transmitted over a single IP-based network. Data centers are designed on TIER III standards, and network cabling and optic fiber connectivity are also available. The site also has HVAC & CRAC units for optimal air flow with backup UPS and secondary Diesel power generator. Water and electricity are provided by DEWA. The site is located in a prime area where it is 15 minutes away from Dubai International Airport, 10 minutes away from Business Districts, and 20 minutes away from Jebel Ali Port and Port Rashid.

**Soft Infrastructure:** government services are provided via the government of Dubai. Also, there are municipal services, building certifications, immigration services, and visa processing. Within the



site, there are postal services (appropriate PO box registering) and networking events. The site also includes dedicated client management center. Dubai Silicon Oasis has partnerships with Rochester Institute of Technology and the American University of Sharjah. The site provides incubator programs (business set-up support) and venture capital programs.

**Urban Development:** Dubai Silicon Oasis has offices, commercial sites, manufacturing and industrial units, hotels and residential, and labs. The buildings have first generation building management systems and are primarily low and mid rise buildings. The site has an iconic landmark building. Other than that, the site has conference facilities and multiple other amenities such as hotels, fitness facilities, dining and retail, banking and ATMs, medical, security and public safety.



**Privileges:** Dubai Silicon Oasis has a special economic zone where it allows 100% foreign ownership, service trade and industrial licenses, no import or export tax, and a regulated environment. The site also provides a repatriation of capital and profits. There is no tax on corporate and personal income for 50 years. DSO provides its own investment funding up to \$80,000 funding for start-ups, and private investments through DSO's network of venture capital.



## Dubai Technopark

Dubai Technopark is a huge innovation park (21 Km<sup>2</sup>) developed by the UAE government but it is still under construction.

**Scale:** Dubai Technopark was established in 2003 by the UAE government and is still under construction. It will be built over an area of 21km<sup>2</sup> with 30% of this land being open spaces. It is estimated that the park will create 133,000 jobs with more than 100 companies.

**Target Tenant Profile:** the sectors of focus in DTP are:

- Energy
- Biotechnology
- Science and engineering
- Manufacturing



The main job types created by the park are research and academia and engineering and development. Most companies in the park are mature corporates and SMEs, with a few companies being startups.

Flagship companies:



**Hard Infrastructure:** the park has an advanced fiber optic network and uninterrupted power supply. Also, the park has its own water supply through a pumping station. The park can be reached by using the Dubai metro line, and it is in close proximity to Jebel Ali Port and Al Makhtoum Airport.

**Soft Infrastructure:** the park provides one-stop-shop government services and single window clearance. It also holds networking events and interactive forums. DTP has signed MOUs with top-tier universities and host specialized universities within the park. A training program is also available for startups.

**Urban Development:** DTP has offices, commercial places, manufacturing and industrial units, hotels and residential places, and university campuses. The buildings are primarily low- and mid-rise buildings with a few iconic buildings. DTP buildings are also LEED certified and have smart sustainability and facilities management.



**Privileges:** DTP has numerous economic privileges to tenants such as 100% foreign ownership, 100% import and export duties tax exemption, service, trade and industrial licenses, no currency restrictions, no fees associated with company formation, capital and profits may be repatriated, no tax on corporate and personal incomes, and long term land lease agreement up to 15 years.



## DuBiotech

Established by TECOM, DuBiotech is characterized by its iconic and modern buildings and its strategic location.

**Scale:** Located in Dubai, UAE, DuBiotech occupies an area of 2.8 Km<sup>2</sup>. It was established in 2008 (phase 1 only completed) by TECOM (Dubai holding company) It is expected to create more than 20,000 jobs and includes over 150 companies in its portfolio.



**Target Tenant Profile:** Companies in DuBiotech focuses on research and academia, engineering and development and professional services jobs in multiple sectors including biotechnology and healthcare. These companies vary in size, from startups along with some SMEs to mature corporates.

Flagship companies:



**Hard Infrastructure:** DuBiotech has a very good IT and telecom infrastructure. Regarding the utilities, DuBiotech boasts an uninterrupted and continuous power supply. DuBiotech is also located in a very strategic spot in Dubai, it is near Al Makhtoum international airport and has a direct access to Al Khalil & Sheikh Mohammed Bin Zayed freeway.

**Soft Infrastructure:** DuBiotech includes an intermediate one stop office between companies and governmental agencies and fast-track immigration and customs procedures. The hub also provides technical support through a professional support team and organizes various educational workshops. DuBiotech is able to attract talent through a strong talent pipeline due to its proximity to Dubai's top universities including the American University of Dubai and due to the collaboration with Life medical center and Welcare Ambulatory clinic. DuBiotech provides strong incubation and acceleration exposure through organizing networking events and providing training and access to funders.

**Urban Development:** The project covers many types of buildings including offices, testing and research labs, business centers and commercial spaces. The buildings are primarily mid-rise buildings and mostly iconic and modern resembling a DNA with a silver LEED certification. The hub also includes conference facilities and a multitude of amenities such as entertainment facilities, ATMs and banks, cafeterias in addition to some manufacturing and educational facilities.



**Privileges:** DuBiotech is the world's first biotech park free-zone. This hub provides also long-term land leases, 100% foreign ownership, 100% repartition of profits and 50 years exemption from personal, income and corporate taxes. DuBiotech provides funding opportunities through the foundation for research and innovation (FRI). In addition, DuBiotech's science investment committee is considering some joint ventures between DuBiotech and biotechnology companies.





## Qatar sciences and technology park

**Scale:** Located in Al Rayyan, Doha, Qatar, Qatar sciences and technology park occupies an area of 1.2 Km<sup>2</sup>. It was established in 2009 by Qatar foundation. It is expected to create more than 1,500 jobs and includes over 110 companies in its portfolio.

**Target Tenant Profile:** Companies in Qatar sciences and technology park focus on research and academia and engineering and development jobs in multiple sectors including:

- ICT
- Healthcare
- Energy
- Science and engineering

These companies vary in size, most of them are startups and SMEs with some mature corporates.

Flagship companies:



**Hard Infrastructure:** Qatar sciences and technology park is an onsite Tier 3 data center with hosting and cloud services, also the park provides advanced fiber optic network. Regarding the utilities, Qatar sciences and technology park boasts an unlimited power supply and district cooling services. The park is also in a very strategic spot in Doha, it is near to Doha expressway and Doha port and 30 min away from Hamad international airport.

**Soft Infrastructure:** Qatar sciences and technology park provides services such as server hosting, applications hosting and backup and recovery along with IP management services. The hub also provides commercialization programs and is building links continuously with universities, government and industries. The park is able to attract talent through a strong talent pipeline due to its proximity to Qatar's top universities and research centers including Carnegie Mellon Qatar and Sidra Medical & research Center. Qatar sciences and technology park supports tech-based entrepreneurship ventures through incubation, funding, training and connection to the global tech ecosystem

**Urban Development:** The project covers many types of buildings including offices, commercial spaces, labs and green spaces. The buildings are primarily low-rise buildings and mostly iconic with a silver LEED certification. The hub also includes facilities and a multitude of amenities such as fitness facilities, cafeterias, banking and ATMs, medical, security and public safety.



**Privileges:** Qatar sciences and technology park special economic zone offers a large variety of offerings that includes 100% foreign ownership, 100% import and export duties tax exemption, no currency restrictions in addition to fees exemption with company formation, branch registration and licensing. In addition, the park offers full repatriation of capital and profits and tax exemption for corporate and personal income. Qatar sciences and technology offers funding opportunities through QSTO Tech Venture funding program for selected promising startups up to \$385,000.



## King Hussein business park

King Hussein business park was established by the Jordan government and it is located in Amman.

**Scale:** Located in Amman, Jordan, King Hussein business park occupies an area of 0.1 Km<sup>2</sup> with a planned expansion to 1.4 Km<sup>2</sup>. It was established in 2010 by the Jordan government and it is expected to create more than 3,600 jobs and includes over 65 companies in its portfolio.

**Target Tenant Profile:** Companies in Qatar sciences and technology park focus on administrative, sales, marketing and professional services jobs in multiple sectors including:

- ICT
- Digital media
- Healthcare
- Banking and finance.

These companies vary in size, most of them are mature corporates with some startups and SMEs.

Flagship companies:



**Hard Infrastructure:** King Hussein business park provides good internet and communication systems. Regarding the utilities, the park provides continuous power supply with firefighting services and maintenance solutions. The park also provides shuttle bus services and contains parking, cycling tracks and pedestrian friendly roads.



**Soft Infrastructure:** King Hussein business park provides municipal services in addition to property registration/transfer services. The park also provides streamlined business procedures and licensing services for expatriates. The park is able to attract talent through a strong talent pipeline due to its collaboration with Royal Scientific society & Zain and due to its proximity to medical devices technology institute and royal medical services college. King Hussein business park contains a start-up hub called GROW that provides incubation and acceleration services through entities like iPark, Zinc, Big by Orange, and the Tanks by Umniah.

**Urban Development:** The project covers many types of buildings including offices, commercial spaces (retail, sports facilities) and hotels. The buildings are modern. The hub also includes a convention center, retail, hotels and a multitude of amenities such as sports facilities and cafeterias.



**Privileges:** King Hussein business park provides a wide variety of incentives given by the Jordanian investment law, those incentives include

- Streamlined customs regulations to speed import/export of products and materials
- Allowances for the establishment of free zones within the bounds of the development zones
- 0% income tax, sales tax, import duties, social services tax and dividends tax
- No restrictions on foreign ownership
- Improved investor protection and disclosure of company transactions
- Improved enforcement of intellectual property

The park also provides funding opportunities in collaboration with Zain Jordan.

## Information technology and communication complex

This project was announced recently in 2016 and it is still under development.

**Scale:** Located in Riyadh, KSA, Information technology and communication complex occupies an area of 0.8 Km<sup>2</sup>. It was announced in 2016 and it is still under development. Saudi Public Pension Agency (PPA) is taking charge of the project development.

**Target Tenant Profile:** Companies in Information technology and communication complex focuses on administrative, sales and marketing and professional services jobs in multiple sectors including:



- ICT
- Banking & Finance
- Education
- Digital Media

**Hard Infrastructure:** King Hussein business park provides advanced fiber optic networks integrating VPN, IPTV and IP phone system. The park also contains a tier 4 data center and server rooms and a full cloud integration system. Regarding the utilities, the park provides continuous power supply with district cooling, waste water treatment plant and potable water supplying plant. The park is also in a very strategic spot in Riyadh due to its proximity to King Khaled International airport and to its direct access to Al Iman Saud Ibn Abdul Aziz Road.

**Soft Infrastructure:** King Hussein business park provides IP management services and gives the ability to pay for all services and utilities on a single bill. The park is able to attract talent through a strong talent pipeline due to its collaboration with King Saud University.

**Urban Development:** The project is planned to cover many types of buildings including offices, research centers and labs, commercial centers (retail), hotels and residential buildings (apartments+ villas). The buildings are planned to be mid-rise buildings with smart facility management features and remote controlling of all utilities. The park is also planned to include Conference facilities & amenities (entertainment facilities, banks & ATMs, cafeteria, gyms, hotel, exhibition center, malls, Mosque)





## Smart Villages

**Scale:** Located in Giza, West of Cairo, Egypt, Smart Villages project occupies an area of 1 Km<sup>2</sup>. It was established in 2000 by a partnership between the public and private sector and it is expected to create around 40,000 jobs and includes over 160 companies in its portfolio.

**Target Tenant Profile:** Companies in Smart Villages focus on engineering and development, research and academia and professional services jobs in multiple sectors including:

- ICT
- Banking and finance
- Education
- Digital media

These companies vary in size, most of them are mature corporates with some startups and SMEs.

Flagship companies:



**Hard Infrastructure:** Smart villages project provides fiber optic cable network connecting to all communication providers with VPN connection, VOIP capability and contains a data center. Regarding the utilities, the park provides redundant power sources with multiple water tanks for various use. Smart villages project is also located in a very strategic spot in Egypt due to its proximity to Sphinx international airport and it is accessible through Alexandria desert highway.

**Soft Infrastructure:** Smart villages project is a one stop shop services and provides IP management services. The project also provides technical support through Training and workshops offered to the

community. The project is able to attract talent through a strong talent pipeline due to its proximity to universities such as the Information technology Institute and Paris ESLSA Business School.

The project also offers incubation and acceleration services by providing introductory service to attract companies willing to test the markets with minimum commitments and providing funding for incubators.

**Urban Development:** The project covers many types of buildings including offices, commercial spaces residential and hospitality. The buildings are primarily low and mid-rise iconic modern buildings. The hub also includes conference facilities & amenities (hotels, fitness facilities, dining, banking & atm, medical, security and public safety).



**Privileges:** Smart villages project provides some incentives that include 100% foreign ownership and exemption from corporate VAT for 10 years.





## Casablanca Technopark

Casablanca technopark is one of the oldest technoparks developed in Morocco by a joint venture between the Moroccan government and private banks.

**Scale:** Located in Casablanca, Morocco, Casablanca technopark occupies an area of 16,000m<sup>2</sup>. It was established in 2001 through a joint venture between Moroccan Government and private banks. It created more than 2,000 jobs and includes over 300 companies in its portfolio.



**Target Tenant Profile:** Companies in Casablanca technopark focus on research and academia, engineering and development and professional services jobs in multiple sectors including:

- ICT
- Education
- Banking and finance
- Energy

These companies vary in size, with most of them being startups along with some SMEs and mature corporates.

Flagship companies:



**Hard Infrastructure:** Casablanca technopark has a high-tech infrastructure. Regarding the utilities, the projects offers uninterrupted and continuous energy with district cooling services. Casablanca

technopark is also located in a very strategic spot in Casablanca, where it is 20 Km away from Casablanca international airport.

**Soft Infrastructure:** Casablanca technopark provides an intermediate one stop office between companies and governmental agencies. The hub also provides technical support to the companies that include HR services, legal counselling and accounting services. Casablanca technopark is able to attract talent through a strong talent pipeline due to its partnership with universities like University of Al Akhawayne, INTP (telecom), EMI (engineering) and ENSIAS (Information system). Casablanca technopark provides strong incubation and acceleration exposure through incubation programs with business incentives to accelerate startups and ensure their success. In addition, it offers numerous funding networks.

**Urban Development:** The land has many types of buildings including offices, retail, conference rooms and common areas. The buildings are primarily mid-rise buildings with Smart features, green initiatives and a photovoltaic station. The park also includes Conference facilities and amenities such as entertainment facilities, banks, ATMs and a cafeteria.



**Privileges:** Casablanca technopark offers a diversity of funding opportunities in collaboration with Start Up Maroc, Fikra and Maroc numeric fund.



## Rabat Technopolis

This innovation cluster is characterized by its strategic location in Rabat.

**Scale:** Located in Rabat, Morocco, Rabat Technopolis occupies an area of 1.07 Km<sup>2</sup>. It was established in 2007 by the Moroccan government through CDG (Caisse de Dépôt et de Gestion). It created more than 7,000 jobs (40,000 planned in the next phases) and includes over 80 companies in its portfolio.



**Target Tenant Profile:** Companies in Rabat Technopolis focuses on sales and marketing, industrial and manufacturing and professional services jobs in multiple sectors including:

- Education
- ICT
- Digital media
- Banking and finance
- Sciences and engineering
- Biotechnology

These companies vary in size, with most of them being SMEs and mature corporates, with some startups.

Flagship companies:



**Hard Infrastructure:** Rabat technopolis has a high-tech infrastructure. Regarding the utilities, the projects offers uninterrupted and continuous energy. Rabat technopolis is also located in a very strategic



spot in Rabat, where it is 5 Km away from Rabat international airport and 60 min from Casablanca international airport.

**Soft Infrastructure:** Rabat technopolis provides many government services including IP management services and Staff representation inside companies is done directly without labor union. In addition, the park provides assistance program in several terms of administration, hiring and others services to the companies.

Rabat technopolis is able to attract talent through a strong talent pipeline due to its partnership with universities like the International University of Rabat, University of Souissi and University Mohammed V. The park provides incubation and acceleration through adapted training services and incubator programs.

**Urban Development:** The land has many types of buildings including offices, commercial spaces, industrial units and green spaces. The buildings are primarily mid-rise buildings with Smart facility management and suited for advanced technological industries. The park also includes conference facilities and amenities like entertainment facilities, banks & ATMs, cafeteria, multimedia library, exhibition centers, medical centers, post offices, shops and a nursery.



**Privileges:** Rabat technopolis offers a wide variety of economic incentives including:

- Free zone exchange rate system
- Corporate taxes & fiscal system: exempted in Free Trade Zones
- Personal taxes: agreements for non-dual taxes with foreign countries
- Real Estate taxes: Exempted in the free zone areas in the Technopolis

In addition to funding opportunities through the Emergence Pact program that provides investments from a network of banks and AFD (Agence Française de Développement)

## Technopark Istanbul

**Scale:** Technopark Istanbul was established in 2009 by the Secretariat for Defense Industries & the Istanbul Chamber of Commerce. It occupies a land area of 0.17km<sup>2</sup>. It has created more than 2,750 jobs and includes more than 300 companies.



**Target Tenant Profile:** the park focuses on main sectors in its operations such as:

- Defense
- Healthcare and biotechnology
- Energy
- Science and engineering
- ICT
- Manufacturing

In these sectors, the main job types are research, academia, and engineering and development. The vast majority of companies in the park are SMEs, while the second highest share goes to mature corporates. Startups make up a small portion of the companies.

Flagship companies:



**Hard Infrastructure:** the park has a well-established data and telecommunications network through a fiber optic cable network connecting to all communication providers. The park has uninterrupted and continuous energy and is in very close proximity to the Sabiha Airport.

**Soft Infrastructure:** Technopark Istanbul has a one-stop-shop services and IP management services for government services. As for business services, the park provides planning and policy development services, project monitoring and evaluation services, and project development and management services. The park is also very close to universities such as Information Technology Institute, Paris ESLSA Business School, and Drexel University. The park also provides free office spaces on Idea Cube Incubation center, as well as free internet, telephone, photocopy, and UPS services for incubators entrepreneurs.

**Urban Development:** the park consists of offices, retail and commercial spaces, green spaces, and business centers and conference rooms. The buildings have modern and iconic architecture and are mostly low and mid rise buildings. All buildings are gold LEED certified and equipped with smart facilities management. The park also has conference facilities, hotels, fitness facilities, dining and retail, banking and ATMs, medical and security.



**Privileges:** Technopark Istanbul benefits from Technology Development Zone law no. 4691 which states that R&D activities are exempt from corporate and income tax until the end of 2023. Also, R&D personnel and software personnel are exempt from income tax until 2023. 50% of employer's share of social security premium will be covered by government for 5 years until end of 2023. The park provides venture capital funding through Venture Capital Fund of Technopark Istanbul which provides financial support to its tenant supported by law no. 5746 for the support of R&D activities.



## ODTÜ Teknokent

This technopark is located in the heart of the Turkish capital Ankara.

**Scale:** ODTÜ Teknokent, located in Ankara, Turkey, was established in 2001 by a close corporation of ODTU Development Foundation, Orta Dogu Teknik Universitesi, Ankara Chamber of Commerce, Bleda Inc. & EBI Inc. it has created more than 6,700 jobs through more than 360 companies.



**Target Tenant Profile:** the park has a high focus on the ICT sector, which makes up 51% of all sectors involved. Other sectors of focus are healthcare, energy, science and engineering, defense, manufacturing, and finance. The job types in these sectors are mainly research, academia, engineering and development, and professional services. Most companies involved are SMEs, with a few being mature corporates and startups.

Flagship companies:



**Hard Infrastructure:** the park has a well-integrated electrical, internet, and communication infrastructure. It has an uninterrupted and continuous power supply. The site is easily accessible since it is only 40 minutes away from Ankara Esenboga Airport.

**Soft Infrastructure:** the park offers a one-stop-shop for government services as well as IP management services. Companies are eligible to make use of the 365 laboratories and 40 research centers, but with special conditions. A university-industry collaboration is integrated into the system as a condition of the rental contracts. The park also has pre-incubation programs to promote technology-based entrepreneurship, as well as training programs with financial services for startups.



**Urban Development:** the park is made of offices, industrial labs, commercial spaces, and green spaces. Other amenities include conference facilities, hotels, fitness facilities, dining and retail, banking and ATMs, medical, security, and public safety. Buildings are mostly low-rise and have iconic, modern architecture. Industrial buildings are smartly equipped to host technology and defense companies.



**Privileges:** Technopark Istanbul benefits from Technology Development Zone law no. 4691 which states that R&D activities are exempt from corporate and income tax until the end of 2023. Also, R&D personnel and software personnel are exempt from income tax until 2023. 50% of employer's share of social security premium will be covered by government for 5 years until end of 2023. Funding is acquired through government support, ACCEL/INCUB, and the Association for Business Angels Network.



## Gav-Yam Negev Park

Located in Be'er Sheva in Israel, this park focuses on R&D activities.

**Scale:** the park is located in Be'er Sheva in Israel over an area of 200,000m<sup>2</sup>. It was built through a partnership between IDB building group, Gurion university, Be'er-Sheva municipality, KUD int. and the Government of Israel. It is expected to create around 1,500 jobs and include more than 50 companies.



**Target Tenant Profile:** the park focuses on ICT and education sectors through R&D centers. The companies are split more or less equally according to sizes.

Flagship companies:



**Hard Infrastructure:** the park boasts a high-tech infrastructure for data and telecommunications. It is connected to uninterrupted and continuous energy along with a central energy center for cooling and heating. The park also has photocell sensors and energy conservation systems. The park is highly accessible because of its location next to the Be'er Sheva North train station and with direct access to Highway 6 and the city's major traffic arteries.

**Soft Infrastructure:** the park allows for on-demand ordinary government services for tenants, as well as administrative services and marketing and investor support. The park has partnered with Ben-Gurion University of the Negev.

**Urban Development:** the park consists of office spaces along with commercial spaces (restaurants and retail), dedicated green spaces, and a technology campus. Other than that, the park has multiple conference facilities and amenities such as medical clinic, bank, postal services, transportation,

kindergartens, restaurants and shops. The buildings are mostly mid-rise buildings with iconic and modern architecture. Buildings have silver LEED certification for environmentally friendly construction standards.



**Privileges:** the park allows for R&D and employment grants issued by the Israeli Government for companies. Also, the Ministry of Industry has established local economic planning, concentrating and creating databases to benefit investors and developers.



## Matam Park

This technopark is located in a very strategic point in Haifa.

**Scale:** Matam Park is located in Haifa, Israel, built over an area of 220,000m<sup>2</sup>. It was developed through a partnership between Gav-Yam and Haifa Economic Corporation. Since inception, it has created 10,000 jobs and currently holds more than 50 companies.



**Target Tenant Profile:** the main sectors of focus in this park are:

- ICT
- Banking and finance
- Healthcare

The jobs created by these sectors are mostly engineering and development jobs, and the companies are divided among mature corporates, SMEs, and startups.

Flagship companies:



**Hard Infrastructure:** data and telecommunications in the park have a high-tech infrastructure. The park itself is supplied by two different transformer stations in Haifa to enable the continuous flow of electricity in case of electricity failure. The park is 20 minutes away from Haifa airport, and is within close proximity to highways 2 and 4. It is also close to large transport facilities such as the Carmel Beach Railway Station and Egged's main railway station.

**Soft Infrastructure:** Matam Park allows for on-demand ordinary government services, as well as administrative services and postal services. The park is close to Israel's leading technology research institutions which are the Technion, Israel Institute of Technology, the Medical School, and Haifa University.



**Urban Development:** the park consists of offices and commercial spaces, as well as dedicated green spaces. It also features multiple amenities such as banks, coffee shops, restaurants, and car services. Buildings are mostly mid-rise with iconic and modern architecture.

**Privileges:** no privileges exist for this park.



## Bar-Lev High Tech Park

**Scale:** spread across 65,000m<sup>2</sup>, Bar-Lev High Tech Park is located in Galilee, Israel. It was developed by the Israeli government in 2014. The park has created 4,000 jobs and includes more than 100 companies.

**Target Tenant Profile:** the main focus sectors are ICT and digital media, with the main job types being engineering and development. Companies in the park are spread between mature corporates, SMEs, and startups.

Flagship companies:



**Hard Infrastructure:** the park has a high-tech data and telecommunications infrastructure, as well as an uninterrupted and continuous energy connection. The park is close to Ahihud train station, where direct trains run every hour between Central Israel and the park.

**Soft Infrastructure:** the park allows on-demand ordinary government services, as well as administrative services, enriching lectures, and professional workshops. It is close to Israel's leading universities such as Haifa Technion, Haifa University, ORT Braude Karmiel Technical College, and Western Galilee College. The park provides training programs and professional workshops for startups.

**Urban Development:** the park is made up of offices, retail and commercial spaces, green spaces, and conference rooms. Other amenities in the park include a gym, childcare facilities, an auditorium, and cafes and restaurants. Buildings are mid-rise height and constructed with top construction standards.



**Privileges:** Bar-Lev Park allows tax benefits for employees residing in some of the villages in the park's vicinity. In addition, the park is assisted from the Chief Scientist's Grants Program. The park supports in employing minorities including funding, training, and subsidies of up to 35% of their salaries.



## Inovallée

This project is located in France and includes a large list of international companies.

**Scale:** Inovallée was established in 1972 in Grenoble, France. It covers an area of 1.1km<sup>2</sup> and has created more than 12,000 jobs since establishment. Current tenants sum up to more than 380 companies.

**Target Tenant Profile:** most created jobs in Inovallée are related to research and academia, engineering and development, administrative, and professional services. Inovallée also focuses on certain sectors which are **ICT, digital media, biotechnology, healthcare, science and engineering, and energy**. Most company tenants in the site are SMEs, and startups also have a big share. Mature corporates are the least present company size.

Flagship companies:



**Hard Infrastructure:** Inovalle has a fully-integrated fiber optic network delivering high speed data up to 1 Gbps. Server rooms have controlled temperature, and mobile network operators cover all the site. Energy and water are supplied constantly to the region by the government. The site is located in a very accessible place; it is 20 minutes away from SNCF de Grenoble station, 40 minutes away from Grenoble-Isere Airport, and 1.5 hours away from Geneva Airport.

**Soft Infrastructure:** government services are provided on-demand by the local municipality. Inovalle also provides free expert consulting services, as well as networking events, conferences, recruitment forums, and advertising forums. The site is surrounded by many universities including Universite Grenoble Alpes, Grenoble Institute of Technology, and Polygone Scientifique. The site also has an

incubator program called Tarmac Booster Entrepreneurial Program, which provided advanced services and support, networking and funding, and a training program.

**Urban Development:** the site consists of offices and research centers, as well as business centers and green spaces. Other amenities on campus include conference facilities, meeting rooms, and cafeterias. Buildings are primarily low-rise with no iconic architecture.



**Privileges:** Inovalée boasts all inclusive and flexible rental contracts, and the site is up to 85% financially autonomous. It provides tenants connections with key partners for bank loans, loan funds, angel investors, venture capital, and subcontractors.



## Singapore-Sichuan Hi-Tech Innovation Park

This innovation park was recently established in China and covers a large area (around 10.34 Km<sup>2</sup>).

**Scale:** Located in Chengdu, China, Singapore-Sichuan Hi-Tech Innovation Park occupies an area of 10,34 Km<sup>2</sup>. It was established in 2018 through a joint venture between Sichuan & Singapore consortiums. It includes about 34 companies.



**Target Tenant Profile:** Companies in Singapore-Sichuan Hi-Tech Innovation Park focuses on engineering and development, research and academia, electronic information and biomedical jobs in multiple sectors including:

- Digital media
- ICT
- Biotechnology
- Finance

These companies vary in size, with most of them being startups along with some SMEs and mature corporates.

Flagship companies:



**Hard Infrastructure:** Singapore-Sichuan Hi-Tech Innovation Park has a high-tech infrastructure. Regarding the utilities, the park offers uninterrupted power with its power transmission pipelines, telecom pipelines, water pipelines and auxiliary facilities are neatly consolidated in one underground



rack. The park is also located in a very strategic spot in Chengdu, where it is 15 Km away from Chengdu city center, 12 Km from Shuangliu international airport and 40 km from Chengdu Tianfu International Airport.

**Soft Infrastructure:** Singapore-Sichuan Hi-Tech Innovation Park offers one-stop services in settlement, admission, residence and application for entry and exit documents. The park also provides Intellectual Property management services. The park is able to attract talent through a strong talent pipeline due to its proximity to China's top universities including Chengdu university and Sichuan university. The project also contains a sub-park of incubators and accelerators.

**Urban Development:** the land use is divided into offices, residential, commercial and green spaces. Iconic buildings with modern architecture were constructed with the adoption of a series of intelligent infrastructure. The hub also includes world-class amenities ranging from shopping malls, waterfront parks to international hospitals, schools and outdoor areas.



**Privileges:** The park offers various preferential policies on tax. In addition, Hi-tech enterprises receive enormous support from the government depending on its contribution to the economy through revenues, growth rates and other factors. The park also offers access to different forms of financing and specialized funds.



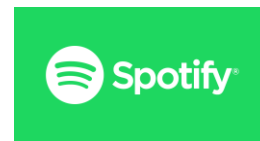
## Silicon Fen

**Scale:** Located in Cambridge, England, Silicon Fen project was established in 1960. It created more than 60,000 jobs and includes around 4,700 companies.

**Target Tenant Profile:** Companies in Silicon Fen focuses on engineering and development, research and academia and professional services in multiple sectors including **ICT, Biotech and manufacturing**. These companies vary in size, with most of them being startups and mature corporates along with some SMEs.



Flagship companies:



RaspberryPi

**Hard Infrastructure:** Silicon Fen project offers a well-connected fiber optic network delivering an average of 500 Mbps with cost of less than £50/month. Regarding the utilities, the project utilizes Cambridge utility installations. The project is also accessible by bicycles, buses and trains.

**Soft Infrastructure:** Silicon Fen project offers technical support by providing access to finance and mentors and offers appropriate spaces for each life stage of a company. The park is able to attract talent due to its collaboration with Cambridge University. The project also offers incubation and acceleration services in collaboration with Barclays eagle lab, Cambridge science park innovation center, biodata innovation center, Ideaspace and St John's Innovation Centre.



**Urban Development:** the land use is divided into offices and commercial. A mix between modern and historic buildings is used. The project also includes a wide variety of amenities.

**Privileges:** The project offers some economic incentives given by UK laws and regulations. It offers also funding through some grants and subsidies.





## Silicon Docks

This project was established in a strategic location in Dublin since 2004.

**Scale:** Silicon Docks are located in Dublin, Ireland, and has been around since 2004. Since inception, it has created more than 40,000 jobs.

**Target Tenant Profile:** the site focuses on main sectors for tenants. These sectors include:

- IT
- Biotech
- Healthcare
- Finance
- Science and engineering

The main jobs created are in research and academia, engineering and development, and professional services. Most tenants are mature corporates, while others are SMEs, and a few others are startups.

Flagship companies:



**Hard Infrastructure:** the city has a well-connected fiber optic network, and utilizes Dublin's utility installations. It is fully connected through all modes of transportation.

**Soft Infrastructure:** Silicon Docks provide government services on-demand, and also provides access to finance, mentors, and spaces appropriate for each life stage of a company. As for talent, Ireland has the

youngest European population and has many universities and colleges such as Dublin City University and Dublin Institute of Technology. Also, the city has many accelerators which provide funding to start-ups.

**Urban Development:** the city building and offices revolve around the canal, while residency and other local amenities are present all around the city. The buildings are a mix of modern and historic architecture, and the city council allowed construction of taller buildings.

**Privileges:** in the city, the Industrial Development Authority is responsible for the attraction and development of foreign direct investment and collaborates with existing foreign investors to expand their business in Ireland. The city benefits from low corporate tax of around 12.5% with lower rental costs and very flexible contract agreements compared to other neighboring cities. Funding is provided through venture capital funds and angel investors.

### 3.1- Lessons Learned

Lessons learned will be derived across 8 key dimensions:



The project  
developer



Scale



The project  
tenants



Sectors



Hard  
infrastructure



Soft  
infrastructure



Urban  
development



Privileges

#### A. The project developer

Different scenarios were used in the development and management of the techparks.

Some techparks were developed by the **public sector** where governments were in charge of providing the land, constructing the techpark and operating it. Six of our benchmarks were developed by the public sector:

- Dubai silicon oasis
- Dubai technopark
- King Hussein park
- Bar-Lev high techpark
- ITCC
- Rabat technopolis

While others were developed by the **private sector** where private companies constructed the project and operated it. Seven of our benchmarks were developed by the private sector:

- Beirut Digital District
- Berytech
- Qatar sciences and technology park
- ODTU teknokent
- Matam park
- Technopark Istanbul
- Singapore-Sichuan Hi-Tech Innovation Park

Some projects were developed and are operated through a **partnership between the private and the public sector**. Different scenarios exist for this partnership. Six of our benchmarks were developed through a PPP:

- Knowledge and innovation center
- Smart villages
- Casablanca technopark

- Gav-Yam-Negev park
- Dubiotech
- Dubai internet city

And some projects grew **organically and naturally** into a tech hub. Different companies gathered in a specific geographic area to form a natural tech hub. Three of our benchmarks were developed naturally:

- Innovallée
- Silicon Fenn
- Silicon Docks

## B. Scale

Benchmarked parks were grouped into 5 different models depending on their size and on the number of jobs created as shown in figure 13.

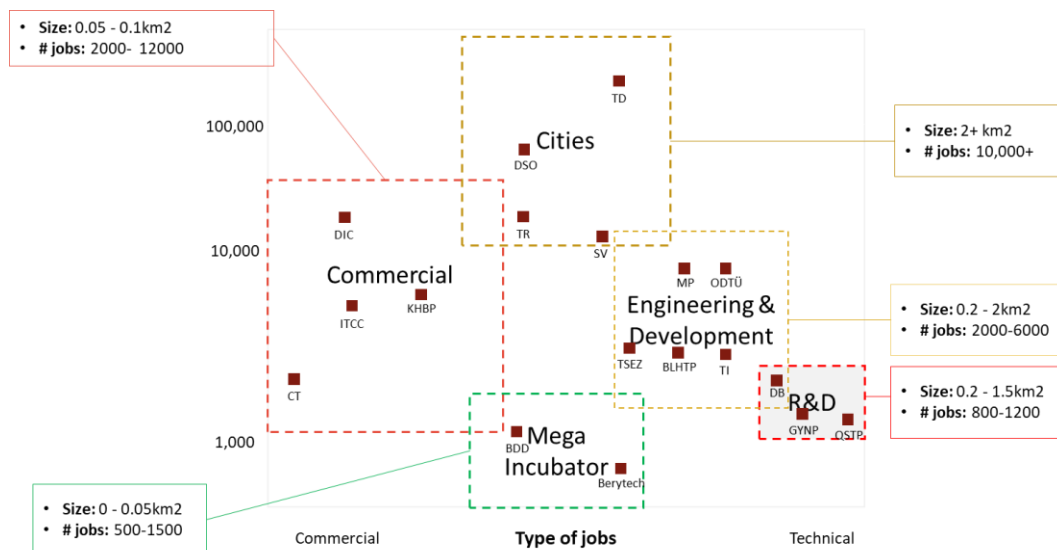


Figure 12. The different techparks models

**Mega Incubator:** common sizes for this type of model are less than 0.05km<sup>2</sup>. They create jobs ranging from 500 to 1500 jobs. As the name suggests, this model has a specific value proposition where it facilitates access to funding and nurtures the start-up of company operations. This promotes a high-tech SME economy and encourages entrepreneurial culture. Therefore, most tenants in this model are start-ups, with little focus on SMEs and mature corporates.

**Engineering and Development:** this model occupies areas around 0.2-2km<sup>2</sup> and creates around 800-1200 jobs. In its value proposition, this model provides a low-cost environment and legal incentives, and opens a new market in MENA region. As a result, this model fosters an autonomous economy, applies and transfers the technical knowhow to the local workforce, and initiates knowledge-based economies. Most tenants are SMEs, while mature corporates have a modest existence. Start-ups are very rare in this model.

**Commercial:** this model occupies a land area of around 0.05-0.1km<sup>2</sup> and creates around 2000-12000 jobs. This model opens a new market in the MENA region, facilitates government services, and provides legal and economic incentives. The impact of this model is that it increases economic activity and GDP while stimulating growth and implicitly creating additional jobs both direct and indirect. Mature corporates occupy the highest number as tenants, while SMEs come next in line and start-ups are the least found.
















**Research and Development:** occupying sizes between 0.2-1.5km<sup>2</sup> and creating around 800-1200 jobs, the R&D model is the most technical model of them all. It provides advanced research facilities and attracts and facilitates access to talented human capital. Therefore, it increases innovation/patents with commercialization potential and attracts highly educated talent. Tenants are equally split among mature corporates, SMEs, and start-ups.

**Cities:** this model occupies the largest land area which is normally more than 2km<sup>2</sup> and creates more than 10,000 jobs. The City model provides advanced large-scale infrastructure and legal & economic incentives while also providing attractive life environments. The model creates a full-fledged and self-sustained knowledge-based economy and heavily proliferates economic growth and GDP. Most tenants are mature corporates and SMEs, while a few are start-ups.

### C. Tenants

The maturity spectrum of tenant companies in techparks varies from one model to the other. Each one of the models attracts tenants of different maturities depending on its value proposition. These companies ultimately create synergies essential for the success of techparks. Table 2 shows the tenant's maturity across the different models.

Table 1. Tenants maturity in the different models

	Mature corporates	SMEs	Startups
Mega Incubator			
Engineering & Development			
R&D			
Commercial			
Cities			

### D. Sectors

Even though these models have different aspects, they have some common sectors of focus. The most common and prevalent sector is the ICT sector where it was present in 18 of the benchmarked parks. The least common sector was defense, showing up only twice. Other sectors that were

present are as follows, listed by order of most common to least common: science and engineering, healthcare, biotech, digital media, manufacturing, energy, banking and finance, and education.

However, even though ICT is a common stand-alone sector, most other sectors overlap with ICT to create sub-sectors which are a combination of the different sectors and the ICT sector. Some examples when banking and finance overlaps with ICT, a fintech sub-sector is created. The most common sub-sectors found in the different benchmarks are presented in figure 14.

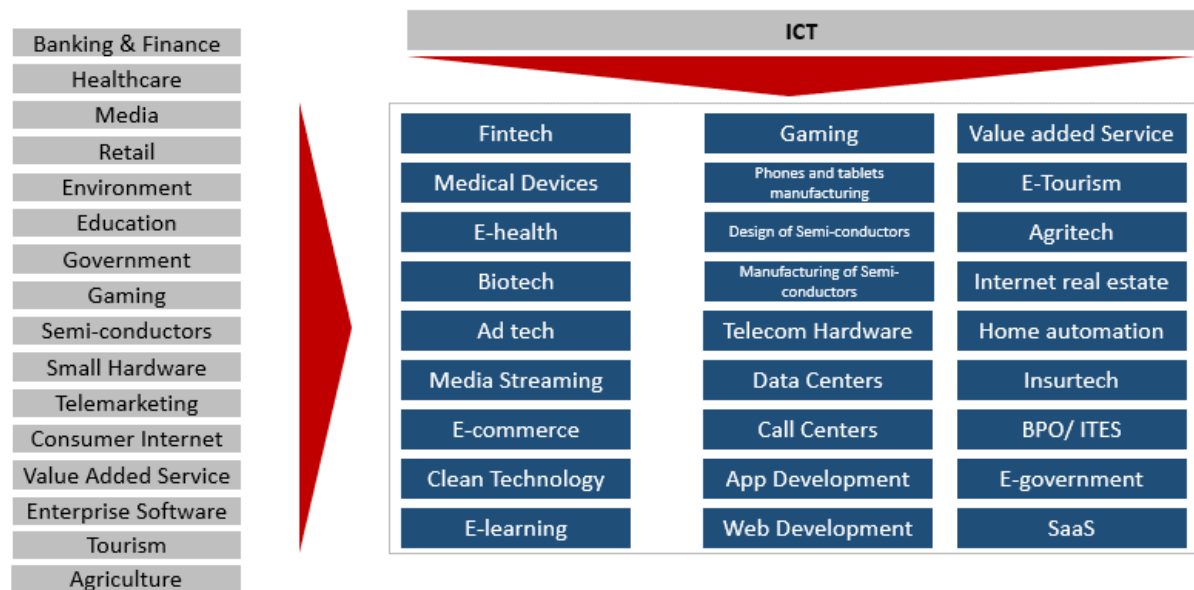


Figure 13. The subsectors identified in the different benchmarks

#### E. Hard infrastructure

The most common thing across all benchmarked parks is that they emphasize heavily on the hard infrastructure components. More than 85% of benchmarked parks included data center hosting, IP based telephony system, network cabling and fiber optic connectivity, sanitary sewer networks, and backup UPS and secondary power generator as main components of their hard infrastructure. Therefore, it is safe to conclude that these are the minimum components for a any park or hub for it to be attractive. These infrastructure components enable high speed internet, easy access to networks, continuous power supply, safety and security, and water sustainability.

#### F. Soft infrastructure

When it comes to soft infrastructure, these parks have different services. Some tend to provide one-stop-shop services like registration, licensing, immigration and postal, while other provide professional services such as HR, accounting, consulting, legal, and others. Nevertheless, what these parks agree on unanimously is the importance of their proximity to universities, colleges, and other educational facilities. This ensures access to a pool of talented resources. The R&D model is considered the main talent importer since it attracts highly skilled resources such as

students with PhDs. Most of the parks also encourage entrepreneurial culture by creating and implementing several incubation and accelerator programs.

### G. Urban development

As the different models increase in size, the level and types of facilities and amenities located in the park increases and becomes more comprehensive. The smallest model is the mega Incubator, and this model includes very basic facilities, whereas larger models include a larger variety of facilities. The facilities offered by the different models are summarized in figure 15.

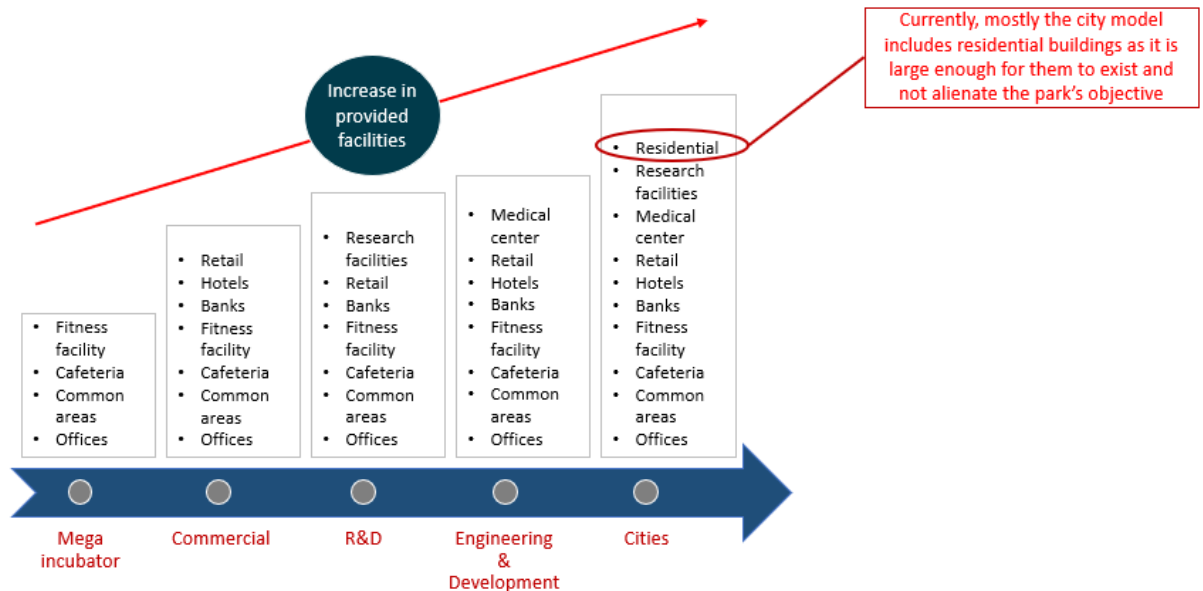


Figure 14. The facilities offered by the different models

Green initiatives are becoming more common depending on the date of establishment of the techpark as environmental awareness is becoming a global concern.

And modern techparks accordingly adopt sustainable processes in their architecture, construction and components:

- Green spaces
- LEED standards in construction
- Energy efficient solutions

### H. Privileges

As for the economic privileges, all local and regional benchmarks benefit from full or partial legal, economic, and funding privileges. The degree of focus on these privileges might change slightly depending on the type of the model. For example, Mega Incubators tend to focus more on funding privileges. Some common privileges are streamlined customs regulations to speed import and export activities, unlimited or time-bound exemption from income, sales, import, and social services taxes, no restriction on foreign ownership and foreign currency exchanges, improved enforcement of intellectual property, streamlined business procedures and licensing facilitation, flexible labor regulations, and access to funders.



In summary, all techparks demonstrate the importance of soft and hard infrastructure, but vary regarding the other characteristics. Table 3 maps all the models across the different dimensions showing their similarities and differences.

Table 2. Summary of the lessons learned across the benchmarks

	Mega incubator	Eng. & development	Commercial	R&D	Cities
Scale	Less than 0.05 km <sup>2</sup> 500 – 1500 Jobs	0.2 - 2 km <sup>2</sup> 2000 – 6000 Jobs	0.05 – 0.1 km <sup>2</sup> 2000 – 12000 Jobs	0.05 - 1.5km <sup>2</sup> 800 – 1200 Jobs	2+ km <sup>2</sup> 10000+ Jobs
Tenants	<ul style="list-style-type: none"><li>• Focus on start-ups</li><li>• Minor presence of SMEs &amp; MNCs</li><li>• Floating sectors and job types</li></ul>	<ul style="list-style-type: none"><li>• Focus on SMEs</li><li>• Partial presence of MNCs and minor presence of start-ups</li><li>• Floating sectors</li></ul>	<ul style="list-style-type: none"><li>• Focus on MNCs</li><li>• Partial presence of SMEs and minor presence of start-ups</li><li>• Floating sectors</li></ul>	<ul style="list-style-type: none"><li>• Equal focus on start-ups, SMEs &amp; MNCs</li><li>• Floating sectors</li></ul>	<ul style="list-style-type: none"><li>• Focus on SMEs &amp; MNCs</li><li>• Minor presence of startups</li><li>• Floating sectors and Job types</li></ul>
Hard inf	All models adopt state-of-the art infrastructure which enables high-speed internet, easy access to the network, constant supply of electricity and water, safety and security systems				
Soft inf	<ul style="list-style-type: none"><li>• Government and business services varies on an individual basis. Example services include one-stop shop services, professional services, and networking opportunities</li><li>• All models tend to reside with close proximity to top-class universities aiming to attract a pool of talented resources. The R&amp;D model exceptionally appeals to PhD students</li><li>• Start-ups are fostered in all models through incubation and acceleration programs which provide necessary support and training as well as access to funding</li></ul>				
Urban dev	<ul style="list-style-type: none"><li>• Open office spaces</li><li>• Access to limited types of facilities such as cafeterias and fitness zones</li></ul>	<ul style="list-style-type: none"><li>• These three models adopt a very similar composition which commonly includes office spaces, restaurants, retail stores, fitness facilities, banks, and some other amenities like medical centers and research facilities</li></ul>			<ul style="list-style-type: none"><li>• Cities incorporate a full urban model which includes all types of facilities ranging from office spaces to residential units</li></ul>
Privileges	Each techpark adopts a portion or the entire set of legal, economic and funding privileges which includes tax exemptions, ownership facilitations, flexible labor laws, access to funders, and enforces intellectual property rights				

### 3.2- Competitive landscape

The Middle East and North African regions are home to more than 30 established and underdevelopment Techparks and techhubs. The UAE has the highest number of hubs in the region with more than 8 established parks. Saudi Arabia comes next in line with around 7 parks distributed among established and under development parks. Other countries in the region with strong presence are Egypt, Jordan, Turkey, Israel, Oman, and Qatar. Lebanon, however, has 2 established parks and a third is under development. All those techparks are presented in figure.16.

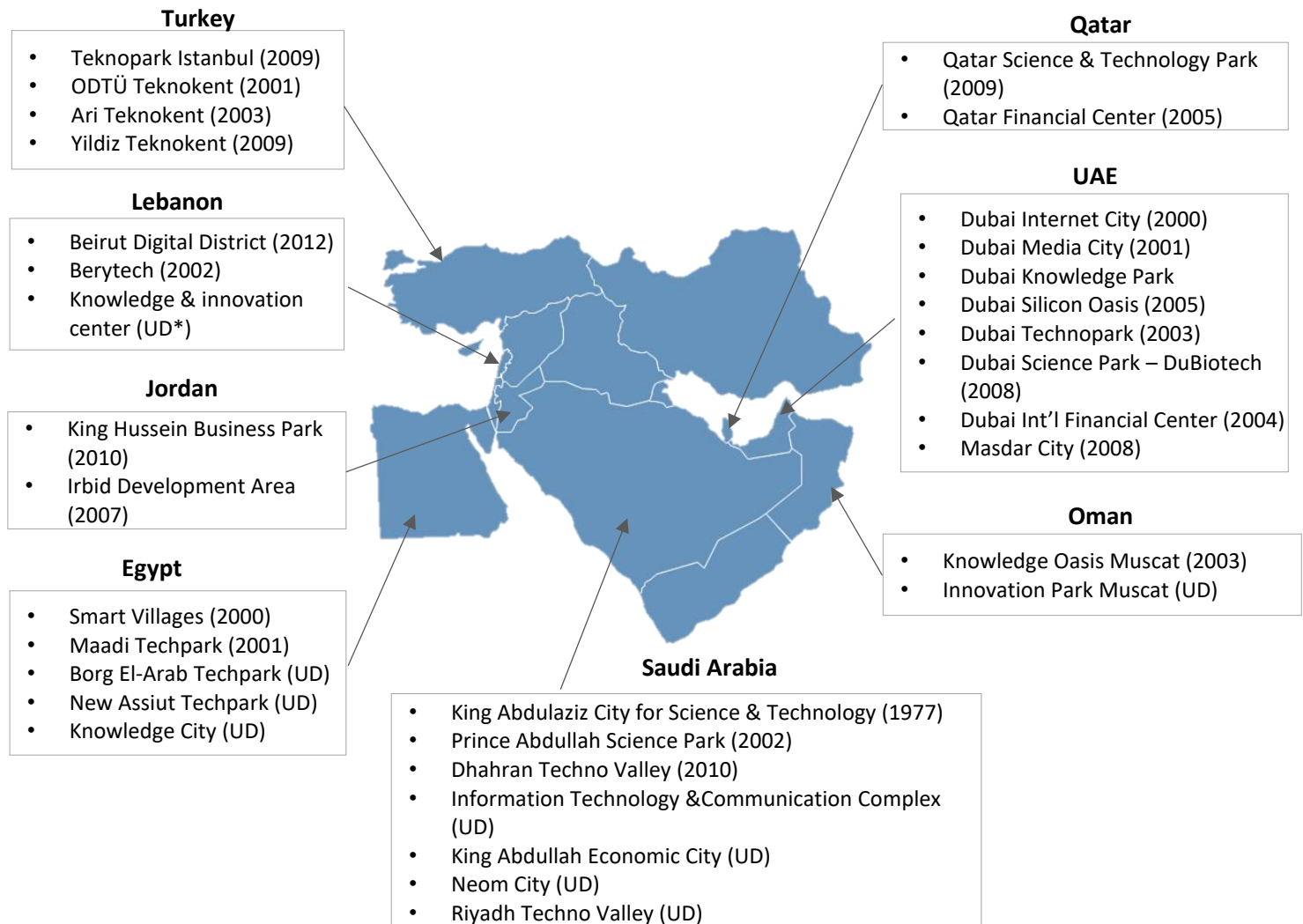


Figure 15. Techparks in the Middle East and North Africa

Most of these Techparks are focusing on the IT and Telecom as a priority. Other sectors of focus are digital media, energy, healthcare, banking and finance, and science and engineering. Because there is a large number of Techparks in the region, 5 of them were used for a deep dive analysis. These parks were selected based on size, proximity, relevant sectors, and job types with high potential number of employees. The selected Techparks are King Hussein Business Park in KSA, Smart Villages in Egypt, Teknopark Istanbul in Turkey, Qatar Science and Technology Park in Qatar, and DuBiotech in Dubai.

To further understand the competition, a list of criteria was used to select some techparks to be studied deeply. These criteria are the following:

- Size
- Proximity
- Relevant sectors
- Job types with high potential number of employees

Five parks were selected to be further studied:

1. King Hussein Business Park
2. Smart Villages
3. Teknopark Istanbul
4. Qatar Science & Technology Park
5. DuBiotech

A list of 6 criteria was used to understand the value proposition of these competitors. These criteria are the following:

**Factor cost**, which is the cost of labor force, rent, and cost of living.

**Talent pool**, which is the affiliation with local and international universities, collaboration with research institutes, and access to large talent pipeline and networking opportunities.

**Legal & Regulatory Environment**, which is the incentives or exemptions on corporate tax, income tax, foreign currencies, flexible labor regulations, and foreign ownership

**Access to capital**, which is the foreign direct investments, public or private funding availability, and investment laws.

**Access to market**, which is the accessibility of the techpark, market size, and potential.

**Life environment**, which is the various amenities at close proximity including recreational parks, green spaces, gyms, local and international events, and entertainment activities.

The results of the evaluation of each techpark across the different criteria are shown in figure 17.

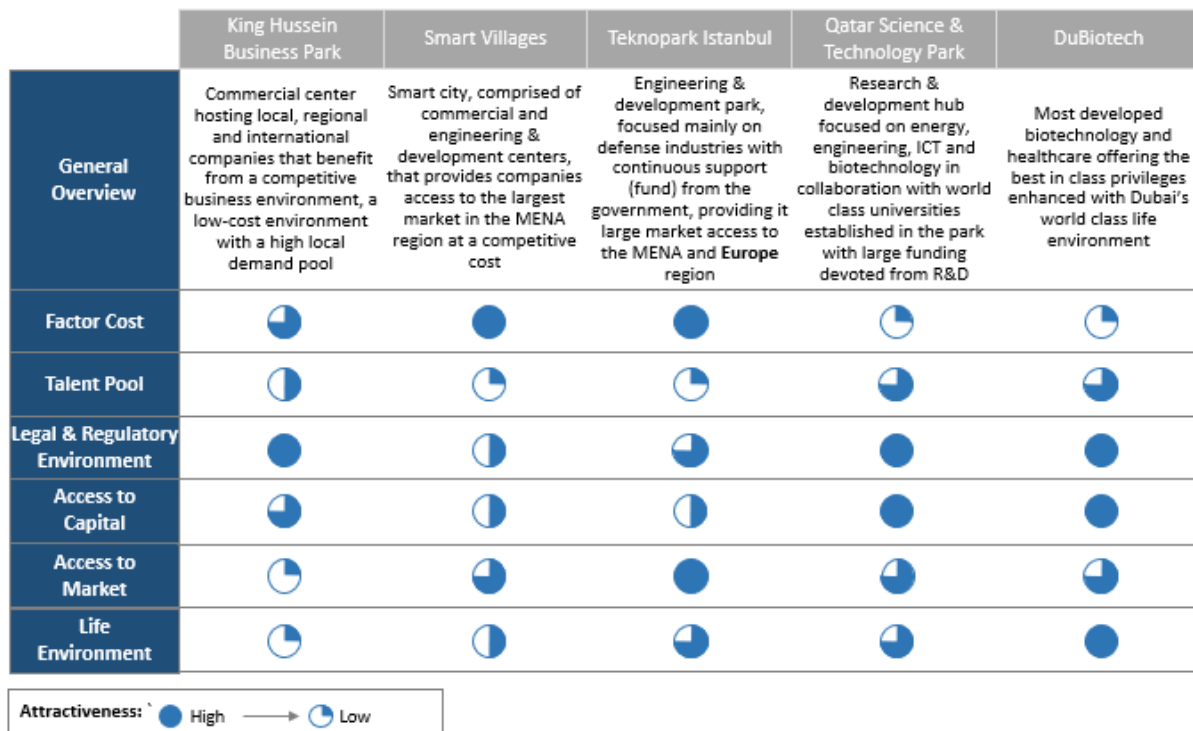


Figure 16. Competitors comparison

Most selected parks provide an attractive factor cost in their value proposition, but the parks in Qatar and Dubai are not strong in this area. As for talent pool, it is the other way around. Qatar Science and Technology park and DuBiotech have a very attractive access to talent pool and collaboration with educational facilities, while the other Techparks are not that strong in this area. All of the parks, however, have a mid to high attractiveness in their legal and regulatory environment and their access to capital. As for the access to market and life environment criteria, all parks expect King Hussein Business Park have a mid to high attractiveness in these areas. The Saudi park shows low attractiveness in either. Finally, it is obvious that each park imposes its own value proposition, but most successful Techparks like DuBiotech perfect most of the selected criteria.

A lot of improvement can be done across the different criteria in order to shape a perfect techpark. Those improvements are shown in table 4.

Table 3. Factors that can be improved

	Can be improved	Hard to improve
<b>Factor Cost</b>	<ul style="list-style-type: none"> <li>• Techparks offer reduced costs compared to the general local market for renting offices, utilities services...</li> <li>• Rents generally depend on size and maturity of companies (start-ups rents are further reduced)</li> </ul>	<ul style="list-style-type: none"> <li>• Labor cost is hard to change within a techpark as minimum wages and average salaries depend on the country's economy. Tenants accordingly would rather establish their presence in a low labor cost country</li> </ul>
<b>Talent Pool</b>	<ul style="list-style-type: none"> <li>• Techparks' collaboration with universities increases their attractiveness to tenants</li> </ul>	<ul style="list-style-type: none"> <li>• The quality of education in a country is beyond the techparks' reach to improve. The latter requires national efforts</li> </ul>
<b>Legal &amp; Regulatory environment</b>	<ul style="list-style-type: none"> <li>• Collaboration with the government to improve legal and economic privileges such as tax exemptions, foreign ownership, etc</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Access to Capital</b>	<ul style="list-style-type: none"> <li>• Collaboration with venture capitals, private and public investors</li> </ul>	<ul style="list-style-type: none"> <li>• Political instability as it retracts foreign direct investment</li> </ul>
<b>Access to Market</b>	<ul style="list-style-type: none"> <li>• Location of techpark integrated within the country's transportation network and links</li> </ul>	<ul style="list-style-type: none"> <li>• The country's general infrastructure in terms of road networks, links, modes of transportation</li> <li>• The local market size</li> </ul>
<b>Life Environment</b>	<ul style="list-style-type: none"> <li>• Techparks establish various facilities and amenities to promote a work-live environment (gyms, retail shops, restaurants, etc.) to attract tenants</li> </ul>	<ul style="list-style-type: none"> <li>• Facilities, amenities and events provided by the techpark are not enough for it to establish its attractiveness. Its integration with the whole country's life environment is more critical</li> </ul>

#### 4- Stakeholders consultation findings

Focus groups were conducted to take insights on the development of a digital innovation cluster in Beirut. Two focus groups were organized on September 3 and 5, which hosted representatives from IDAL, OSMAR, tech entrepreneurs and universities representatives. The objective was to hear the views and input of the tech entrepreneurship ecosystem and to understand the critical factors for the development of a successful Digital Innovation Cluster in terms of infrastructure, amenities, facilities, services, incentives etc.

Table 5 shows the attendees of these focus groups.

*Table 4. Focus groups attendees*

Name	Position	Institution	Institution Description
Zina Dajani	Founder & CEO	Antwork	Incubator
Elias Abou Samra	Director	INMA consulting	Management consulting firm
Rania Fakhoury	Director	OMSAR	Office of the Minister of State for Administrative Reform
Fiona Fayad	Associate	EKP law firm	Law firm
Rita Makhoul	Director	Arabnet	Focuses on events and programs in the tech sector
Nadine Khoukaz	CMO	Microsoft	Technology company
Elias Chedid	Partner	Dentons	Law firm
Nizar Ajeeb	Chief technology officer	Startecheus	Fintech studio
Aisha Habli	Programs lead	Antwork	Incubator
Hala Nassif	Director	LIU	University
Mohammad Makki	Economics dep. chair	LIU	University
Sandra Sarkis	Manager	IRI	Industrial research institute
Samer Hankir	Senior policy analyst/training officer	OMSAR	Office of the Minister of State for Administrative Reform
Hani Raad	General manager	CISCO	Technology company
Nasser Israoui	UNDP project director	OMSAR	Office of the Minister of State for Administrative Reform
Serge Moutran	Manager director	NURVE Partners	Management consulting firm
Joanna Abi Abdallah	Business support manager	Berytech	Incubator

Rania Fakhoury	Director	OMSAR	Office of the Minister of State for Administrative Reform
Sara Assi	Coordinator	AUB	University
Nabil Bou Khalid	President	ISOC	Internet company
Tarek Dalloul	Director	SAP	Software Corporation
Fady Daou	CEO	HTP	Hub for technological innovation and development
Mouhammad Rabah	CEO	BDD	Incubator
Hiba Osman	Chairperson	AUST	University
Johnny Matta	Consultant	Freelance	Consultant
Hala Raphael	Attorney at Law	Raphael & Associates	Third party administrator and independent claims adjusting company
Wissam Eid	Head of management office	TSEZ	Tripoli special economic zone
Wassim Itani	Director and professor	Beirut Arab University	University

The following questions constituted the core of the discussion:

1. What do you think the cluster's main concept and focus should be (R&D, Dev and engineering, commercial, mega incubator...)?
2. What type of tenants should we be targeting?
3. What sub-sectors should we be focusing on?
4. What should be the roles of the private and public sectors in the development of the digital innovation cluster?
5. What type of governmental services and incentives should be put in place to attract tenants?
6. What type of amenities and facilities must be included in the cluster to make it competitive and in line with global best practices?
7. What type of hard infrastructure should the cluster provide to its tenants?
8. What type of governmental and business services should the cluster provide to facilitate its tenants' tasks?
9. What do you think this cluster should do to foster to innovation?



10. How do we attract top tier multinational innovation firms to the cluster?

**Q1: What do you think the cluster main concept and focus should be?**

Research and development gathered the highest portion of voting with 11 votes followed by engineering and development with 8 votes, commercial and cities with 6 votes and mega incubator with only 2 votes.

Most participants agreed that what is currently lagging in Lebanon is an R&D facility. The project concept should be R&D, so it can benefit from the local talent, solve some complex problems in Lebanon (electricity, garbage...) and develop our exports so it could compete with the regional ones.

Some participants agreed that Lebanon doesn't need a mega incubator because funding opportunities are available. In plus, a Commercial concept is not very recommended because we can't compete with the regional ones. And finally, Cities are not suitable because large spaces are not available in Beirut.

**Q2: What type of tenants should we be targeting?**

Most of the participants agreed that the project should host a mixture of Startups, SMEs and mature corporations but should mainly focus on attracting SMES. The proposed mixture obtained by voting is:

- 56% SMEs
- 26% Startups
- 18% mature corporations

**Q3: What sub-sectors should we be focusing on?**

Fintech, clean technology and agritech gathered the highest number of votes. Figure 18 shows the votes gathered by each sub-sector out of 13 votes.

Fintech	10	Home automation	7	E-Tourism	5
Clean Technology	9	Medical Devices	6	Media Streaming	5
Agritech	9	E-health	6	Insurtech	5
E-government	8	Ad tech	6	Telecom Hardware	4
App Development	8	E-commerce	6	Call Centers	4
Gaming	8	E-learning	6	Design of Semi-conductors	3
SaaS	7	Internet real estate	6	Manufacturing of Semi-conductors	1
Web Development	7	Data Centers	6	Phones and tablets manufacturing	0
Biotech	7	Value added Service	5		

Figure 17. Votes gathered by each sub-sector

In addition, some participants suggested to add some sectors related to the creative industries (fashion design, media, advertising...), cybersecurity and logistics and transportation.

**Q5: What should be the roles of the private and public sectors?**

Most of the participants agreed that the project should be developed through a partnership between the public and the private sector. And four participants proposed that the project should be fully owned by the private sector & empowered by the government.

**Q6: What type incentives should be put in place to attract tenants?**

The different services were prioritized by the attendees and the scores were added in order to identify the most demanded incentives. Business processes, tax incentives and transparent customs regulations gathered the highest scores. In plus it was insisted that the labor regulations should be simplified and enhanced in order to facilitate the labor paperwork.

Some participants highlighted the importance of intellectual property protection and its necessity in order to attract foreign companies.

**Q7: What type of amenities and facilities must be included?**

The different amenities were prioritized by the attendees and the scores were added in order to identify the most needed facilities in this techpark. Figure 19 shows the results of the voting.

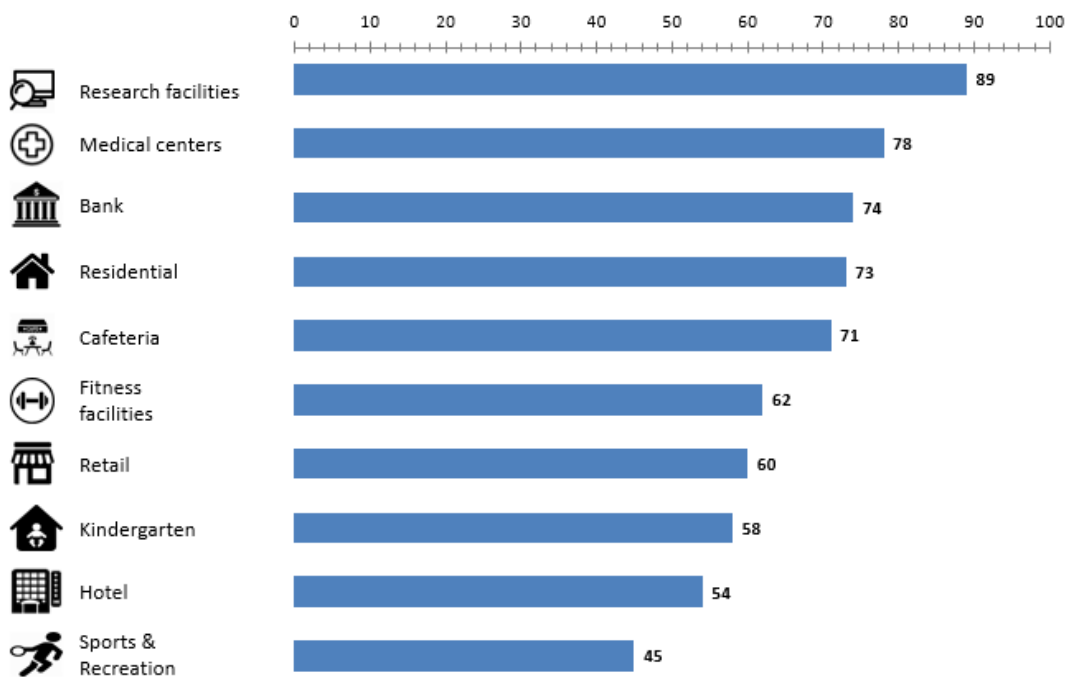


Figure 18. Votes for the type of amenities

It was agreed that research facilities are a must in this techpark. In addition, medical centers, banks, residential facilities and cafeterias must be present due to their regular use by the techpark’s tenants.

**Q8: What type of hard infrastructure should the cluster provide to its tenants?**

It was agreed that a good internet connectivity and permanent power supply should be provided to the techpark's tenants. It was proposed to provide internet connection to the techpark through a fiber optic network and continuous power supply by including back up ups and secondary power generators. The techpark should also contain a water treatment plant and a data center.

**Q9: What type of services should the cluster provide to facilitate its tenant tasks?**

The different governmental and business services were classified according to their importance. The results are shown in table 6.

*Table 5. Importance of governmental and business services*

Service	High	Medium	Low
One-stop shop services	X		
IP management services		x	
Access to Universities	X		
Legal services	X		
Accounting services		X	
HR services		X	
IT services	X		
Administrative services		X	
Trainings		x	
Access to funding	X		
Networking opportunities	X		
Economic incentives	x		

**Q10: What do you think this cluster should do to foster to innovation?**

Four main ideas were suggested regarding the added values that this innovation cluster should propose to foster innovation:

- 1- The cluster should focus on R&D in order to:
  - Benefit from the local talent
  - Increase the exports
  - Bring back the Lebanese diaspora
  - Empower the Lebanese economic activities (industry, electricity...)
  - Find solutions for the main Lebanese problems (electricity, garbage, heavy traffic...)
- 2- The cluster should provide its tenants high-level infrastructure and utilities
- 3- The cluster should focus on ICT sector with some creative industries (architecture, fashion design, media...)
- 4- It should provide an interconnective environment between its tenants and work to build stronger ties between them and local universities.

**Q11 : How do we attract top tier multinational innovation firms to the cluster ?**

Several commitments should be done in order to attract multinational firms:

1. Start clear and transparent discussions with large firms to understand their needs and meet them
2. Ensure economic and political stability
3. Build partnerships with universities to offer their top students to those companies
4. Provide economic incentives and tax exemptions
5. The government should facilitate business through one stop shops and online services
6. The government should facilitate visa paperwork and should decrease its restrictions on work permits
7. The government should ensure IP protection to protect multinational firms
8. The government should provide good infrastructure and utilities (continuous power, high speed internet...)
9. The project should include R&D labs to help those companies in developing their products and services

## 4.1- Sectors

### 4.1.1- Sectors filtering

ICT will form the core industry of the techpark. Other sectors will be mapped across the ICT sector to identify the sub-sectors that will be targeted. For example, the Banking & Finance sector, when mapped across the ICT sector, yields Fintech. Fintech will be potential sector for the techpark.

Creativity related industries have also been identified by the focus groups as a needed key pillar of the cluster. Fashion design, architecture and creative marketing were the sectors proposed.

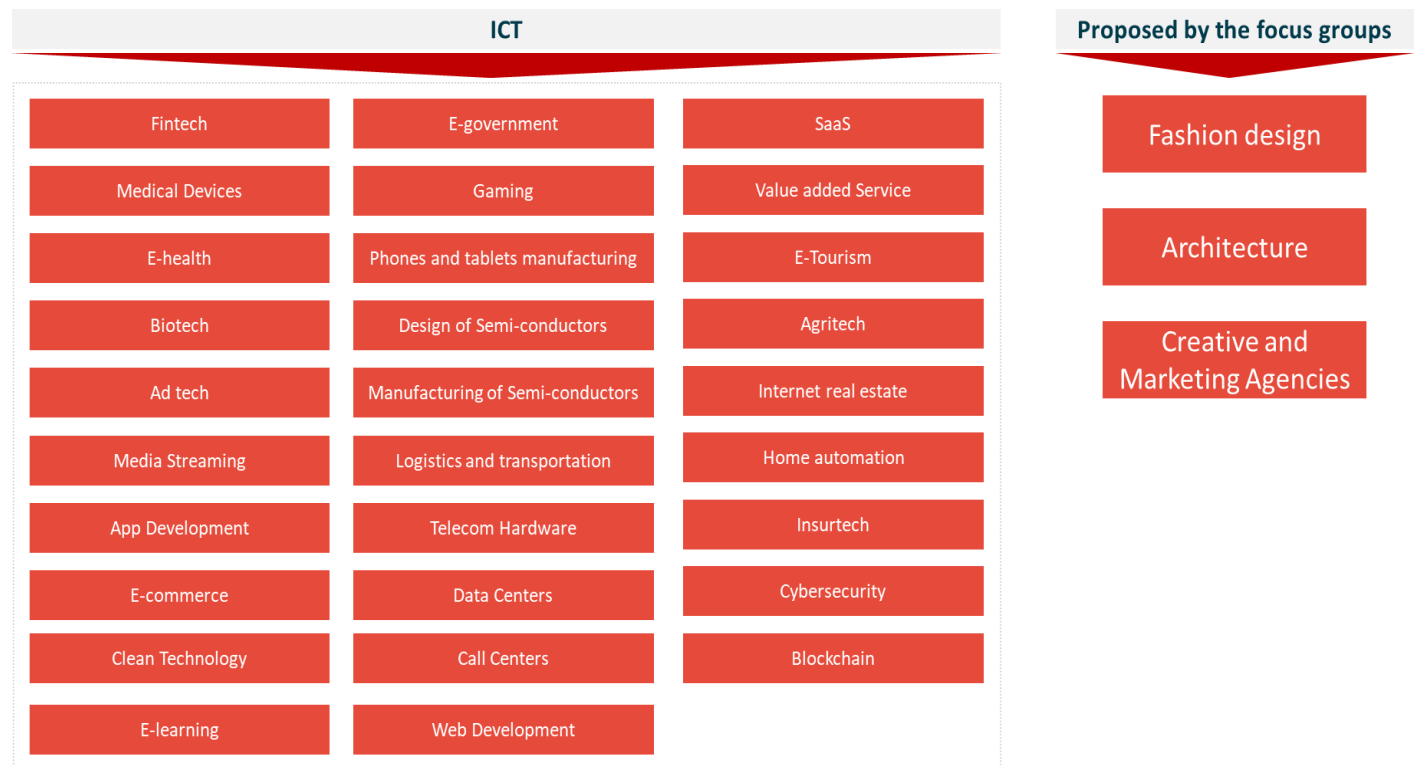


Figure 19. The sectors to be evaluated

To be able to filter out these sub-sectors and identify the priority sectors that the Techpark will focus on, 5 filtering criteria will be used:

**Demand:** qualitatively assesses the local and regional demand for customers buying technology-related products and services.

**Lebanon's Competitive Advantages:** showcases the advantages Lebanon has with regards to each of the sub-sectors.

**Resilience:** measures the resilience of the sub-sectors with regards to political instability and social disruption.

**Export Reach:** assesses the ability to export the products and services to regional and international markets.

**Focus Groups Voting:** considers the voting of the two focus groups on the sub-sectors.

Sub-Sector	Demand	Reasoning
Fintech		Easier access, connectivity & integration of financial services
Medical Equipment		Affected by innovative imports from international markets
E-Health		Ease of connectivity and faster response
Biotech		Limited potential for research and application
Ad tech		Highly demanded especially with high smartphones penetration
Media Streaming		Effective way of content delivery especially Arabic content
E-Commerce		High smartphone penetration rate with relatively high online activity
Clean Tech		Shifting trend towards renewable energy
E-Learning		Strong educational system demanded locally and regionally
E-Government		Highly demanded in Lebanon due to complex traditional paperwork
Gaming		Experiencing a surge with increased mobile and tablet users
Mfg of Semiconductors		Easier to import
Design of Semiconductors		Innovative approaches to designs
Cybersecurity		Increasing demand due to security issues
Fashion design		High local & regional demand for the Lebanese fashion designs
Blockchain		Highly demanded for security concerns

Figure 20. Filtering based on demand

Sub-Sector	Demand	Reasoning
Data Center		Saturated market with highly efficient products
Telecom Hardware		Directly correlated with growth trends
Call Centers		Limited attractiveness
App Development		High smartphone penetration rates
Web Development		High online presence of companies
Value Adding Services		Innovation and search for new attractive areas
Enterprise Software		Future shift towards Software-as-a-Service
E-tourism		Easier access, faster and lower costs of tourism services
Manufacturing of phones and tablets		Affected by innovative imports from international markets
Agritech		Inefficient traditional systems, technology is needed
Internet real estate		Easier access to real estate properties having low prices
Home automation		Considered as luxury features, demanded by a certain portion of the population
Insuretech		Easier access, connectivity and integration of insurance services
Logistics & transp.		Highly demanded due to time and distance constraints
Architecture		Saturated market with high competition and low demand
Creative & marketing		High demand but a big number of players exist

Figure 21. Filtering based on demand



















Sub-Sector	Resilience	Reasoning
Fintech		Financial sector may be affected with security problems
Medical Equipment		Highly sophisticated to be used in unstable conditions
E-Health		Health needs always existent
Biotech		Minimized research efforts
Ad tech		Increase efforts to enhance business
Media Streaming		Continuous need for entertainment
E-Commerce		Reduced spending capacity
Clean Tech		Need is always existent for energy and utility sources
E-Learning		Education needs always existent
E-Government		Continuous need for governmental services
Gaming		Continuous need for entertainment
Mfg of Semiconductors		Reduced spending capacity
Design of Semiconductors		Minimized efforts for innovation and design
Cybersecurity		Need always existent
Fashion design		Reduced spending capacity
Blockchain		Very needed when dealing with security problems

Figure 22. Filtering based on resilience

















Sub-Sector	Resilience	Reasoning
Data Center		Alternative search for data protection
Telecom Hardware		Reduced spending capacity
Call Centers		Reduced spending capacity
App Development		Need always existent
Web Development		Need always existent
Value Adding Services		Minimized efforts for innovation
Enterprise Software		Business needs always existent
E-tourism		Tourism sector is very dependent on political stability
Manufacturing of phones and tablets		Reduced spending capacity
Agritech		Local needs are always existent but the agriculture sector exports may decrease due to security problems
Internet real estate		Real estate sector is affected by the security problems
Home automation		Reduced spending capacity
Insuretech		Need always existent
Logistics & transp.		Affected by security problems
Architecture		Reduced investment in the real estate sector
Creative & marketing		Reduced spending capacity

Figure 23. Filtering based on resilience

















Sub-Sector	Comp. adv.	Reasoning
Fintech		Talented workforce and strong banking system
Medical Equipment		Requires highly talented resource
E-Health		Highly skilled doctors
Biotech		International players already well-established in region
Ad tech		New area to tackle with limited players & high local creativity
Media Streaming		Opportunity potential especially for Arabic content
E-Commerce		Opportunity potential
Clean Tech		All future trends convergent to renewable energies
E-Learning		Strong educational system available in Lebanon
E-Government		Strongly needed in Lebanon
Gaming		Requires highly talented resource & expensive labs
Mfg of Semiconductors		Requires highly talented resources and funding
Design of Semiconductors		Requires highly talented resources
Cybersecurity		Highly skilled workforce that doesn't require high salaries
Fashion design		Professional Lebanese designers
Blockchain		Skilled local workforce

Figure 24. Filtering based on Lebanon's competitive advantage

















Sub-Sector	Comp. adv.	Reasoning
Data Center		International players already well-established in region
Telecom Hardware		International players already well-established in region
Call Centers		Higher costs relative to the region
App Development		Skilled workforce and easy to enter market
Web Development		Skilled workforce and easy to enter market
Value Adding Services		New area to tackle instead of traditional services
Enterprise Software		Opportunity potential
E-tourism		Tourism is one of the strongest sectors in Lebanon
Manufacturing of phones and tablets		Requires highly talented resources and funding
Agritech		Agriculture is a strong sector in Lebanon
Internet real estate		Opportunity potential
Home automation		International players already well-established in region
Insuretech		Opportunity potential
Logistics & transp.		Traffic problems increase transportation costs
Architecture		Skilled and non expensive workforce
Creative & marketing		Skilled local workforce

Figure 25. Filtering based on Lebanon's competitive advantage

















Sub-Sector	Export reach	Reasoning
Fintech		Easily adopted by financial intuitions worldwide
Medical Equipment		Potential export to MENA region
E-Health		Easily marketed and adopted
Biotech		International markets already saturated
Ad tech		Easily marketed and adopted
Media Streaming		Easily exp to regional markets especially with Arabic content
E-Commerce		Pertained to local market due to high export costs
Clean Tech		Relatively saturated regional markets with int players
E-Learning		Easily marketed and adopted
E-Government		Potential adoption by regional governments
Gaming		Potential export to MENA region
Mfg of Semiconductors		Pertained to local market due to high export costs
Design of Semiconductors		Highly innovative talent resources
Cybersecurity		Easily adopted by regional companies
Fashion design		High regional demand due to the good Lebanese quality
Blockchain		New industry that can be exported to regional countries

Figure 26. Filtering based on export reach

















Sub-Sector	Export reach	Reasoning
Data Center		Relatively strict local regulations
Telecom Hardware		Potential export to MENA region
Call Centers		Preference towards local market due to high export costs
App Development		Readily available with easy access
Web Development		Readily available with easy access
Value Adding Services		Easily marketed and adopted
Enterprise Software		Easily marketed and adopted
E-tourism		Not mature and adopted in MENA region
Manufacturing of phones and tablets		International markets are saturated with advanced products
Agritech		Low regional demand
Internet real estate		Easily marketed and adopted
Home automation		Pertained to local market due to high export costs
Insuretech		Easily marketed and adopted
Logistics & transp.		Pertained to local market due to high export costs
Architecture		Lebanese architecture designs are very demanded regionally
Creative & marketing		Strong international players are established in the region

Figure 27. Filtering based on export reach



























Sub-Sector	Focus groups	Sub-Sector	Focus groups
Fintech		Data Center	
Medical Equipment		Telecom Hardware	
E-Health		Call Centers	
Biotech		App Development	
Ad tech		Web Development	
Media Streaming		Value Adding Services	
E-Commerce		Enterprise Software	
Clean Tech		E-tourism	
E-Learning		Manufacturing of phones and tablets	
E-Government		Agritech	
Gaming		Internet real estate	
Mfg of Semiconductors		Home automation	
Design of Semiconductors		Insurtech	
Cybersecurity	Proposed	Logistics & transp.	Proposed
Fashion design	Proposed	Architecture	Proposed
Blockchain	Proposed		

Figure 28. Filtering based on focus groups voting

By filtering the sub-sectors using the specified 5 filters, the results are the following:

Fintech	Web Development	Insurtech	Phones and tablets manufacturing
SaaS	Value added Service	App Development	Manufacturing of Semi-conductors
E-health	E-Tourism	Gaming	Data Centers
E-government	Agritech	Design of Semi-conductors	Medical Devices
Ad tech	Internet real estate	E-commerce	Biotech
Media Streaming	Fashion design	Architecture	Telecom Hardware
E-learning	Cybersecurity	Home automation	Call Centers
Clean Technology	Blockchain	Logistics and transportation	Marketing

Chosen Possible Eliminated

Figure 29. Chosen subsectors

The filtering resulted in 18 chosen sub-sectors for the Techpark:

Fintech, SaaS, e-health, e-government, Ad-tech, Media Streaming, e-learning, Clean Technology, Web Development, Value Added Services, e-tourism, Agritech, Internet Real-estate, Fashion Design, Cybersecurity, Blockchain, Insuretech, App Development

In addition, 4 sub-sectors can possibly be added to the chosen sub-sectors:

Gaming, Design of Semi-conductors, e-commerce, Architecture

9 sub-sectors did not pass the filtering and these are:

Home Automation, Logistics and Transport, Phones and Tablets Manufacturing, Manufacturing of Semi-conductors, Data Centers, Medical Devices, Biotech, Telecom Hardware, Call Centers

#### **4.1.2- Sectors evaluation across the different Lebanese governorate**

The chosen sub-sectors will be evaluated in each governorate in Lebanon according to 4 criteria: land characteristics, talent pipeline, main economic activities, and the region's main needs.

##### ***North Governorate:***

**Land Characteristics:** the land is generally suitable for agriculture and industry. Usually costs there are cheap.

**Talent Pipeline:** there is a small number of universities such as Lebanese University, Balamand, Lebanese International University

**Main Economic Activities:** the main activities in the North are commerce, tourism, industry, and agriculture

**Main Needs:** the governorate is far from government organizations. More hospitals and universities should be established, and this region needs better utilities input

Chosen sub-sectors: e-commerce, clean technology, e-learning, web development, e-tourism, agritech, app development

##### ***Bekaa Governorate:***

**Land Characteristics:** the land is generally suitable for agriculture and industry. Usually costs there are cheap.

**Talent Pipeline:** there is a small number of universities such as Lebanese International University, American University of Science and Technology, CNAM

**Main Economic Activities:** the main activities in the Bekaa are tourism, industry, and agriculture

**Main Needs:** the governorate is far from government organizations. More hospitals and universities should be established, and this region needs better utilities input

Chosen sub-sectors: clean technology, e-learning, web development, e-tourism, agritech, app development

### ***Nabatiye Governorate:***

**Land Characteristics:** the land is generally suitable for agriculture and industry. Usually costs there are cheap.

**Talent Pipeline:** there is a small number of universities such as Lebanese International University, Lebanese University

**Main Economic Activities:** the main activities in the Nabatiye are industry and agriculture

**Main Needs:** the governorate is far from government organizations. More hospitals and universities should be established, and this region needs better utilities input

Chosen sub-sectors: clean technology, e-learning, web development, agritech, app development

### ***South Governorate:***

**Land Characteristics:** the land is generally suitable for agriculture and industry. Usually costs there are cheap.

**Talent Pipeline:** there is a small number of universities such as Lebanese International University, Lebanese University

**Main Economic Activities:** the main activities in the South are industry, agriculture, tourism, commerce

**Main Needs:** the governorate is far from government organizations. More hospitals and universities should be established, and this region needs better utilities input

Chosen sub-sectors: clean technology, e-learning, web development, e-tourism, agritech, app development

### ***Mount Lebanon Governorate:***

**Land Characteristics:** the land is usually expensive, but depends on location

**Talent Pipeline:** 21 universities are available most notably: LAU, USJ, Lebanese University

**Main Economic Activities:** the main activities in the Mount Lebanon are industry (58% of Lebanese industrial firms), agriculture, commerce, tourism

**Main Needs:** this region needs better utilities input

Chosen sub-sectors: Fintech, SaaS, e-health, e-government, Ad-tech, Media Streaming, e-learning, Web Development, Value Added Services, e-tourism, Agritech, Internet Real-estate, Fashion Design, Cybersecurity, Blockchain, Insuretech, App Development, Gaming, Design of Semi-conductors, e-commerce, Architecture

### ***Beirut Governorate:***

**Land Characteristics:** the land is usually expensive, but depends on location

**Talent Pipeline:** 20 universities are available most notably: AUB, LAU, USJ, Lebanese University

**Main Economic Activities:** the main activities in the Mount Lebanon are services, commercial, tourism

**Main Needs:** this region needs better utilities input

Chosen sub-sectors: Fintech, SaaS, e-health, e-government, Ad-tech, Media Streaming, e-learning, Web Development, Value Added Services, e-tourism, Internet Real-estate, Fashion Design, Cybersecurity, Blockchain, Insuretech, App Development, Gaming, Design of Semi-conductors, e-commerce, Architecture

#### 4.1.3- Sectors overview

To be able to understand each of the chosen sectors in detail, a deep dive analysis was performed on each of the sectors:

##### **Fintech**

Definition: Fintech is a financial services sector that uses ICT to provide mobile and online banking, payment platforms, lending and capital raising platforms, money transfer platforms, wealth management.

The MENA market has witnessed a strong growth in Fintech startups since 2011. In 2015, there were 105 startups in the MENA region.

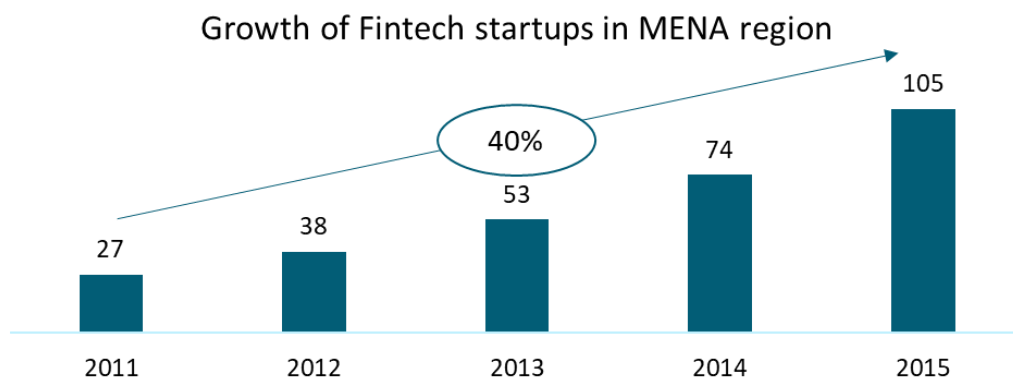
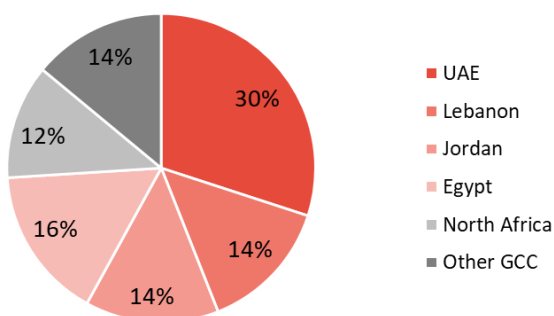


Figure 30. Growth of fintech startups in MENA region

Most of these startups are located in the UAE, with Lebanon sharing third place with Jordan. Lebanon is a fertile market for Fintech due to 3 main reasons: its hosts 14% of the region's fintech, 54% of people with a bank account adopted digital banking in 2017, and Lebanon ranked 2<sup>nd</sup> in the region for people who only used mobile banking.

##### Location of Fintech startups



##### Lebanon is a fertile market for Fintech for 3 main reasons

###### Reason 1

Lebanon hosts 14% of the region's fintech startups and is the 4<sup>th</sup> most served market by fintech companies

###### Reason 2

In 2017, 54% of people with a bank account adopted digital banking in Lebanon

###### Reason 3

In 2016, Lebanon ranked 2<sup>nd</sup> in the region for the percentage of people who only used mobile banking



## E-health

Definition: E-health is falls on the intersection of medical informatics, public health, and business. The information and health services are related through the internet. e-health encompasses technical development, a state-of-mind, an attitude, and a commitment.

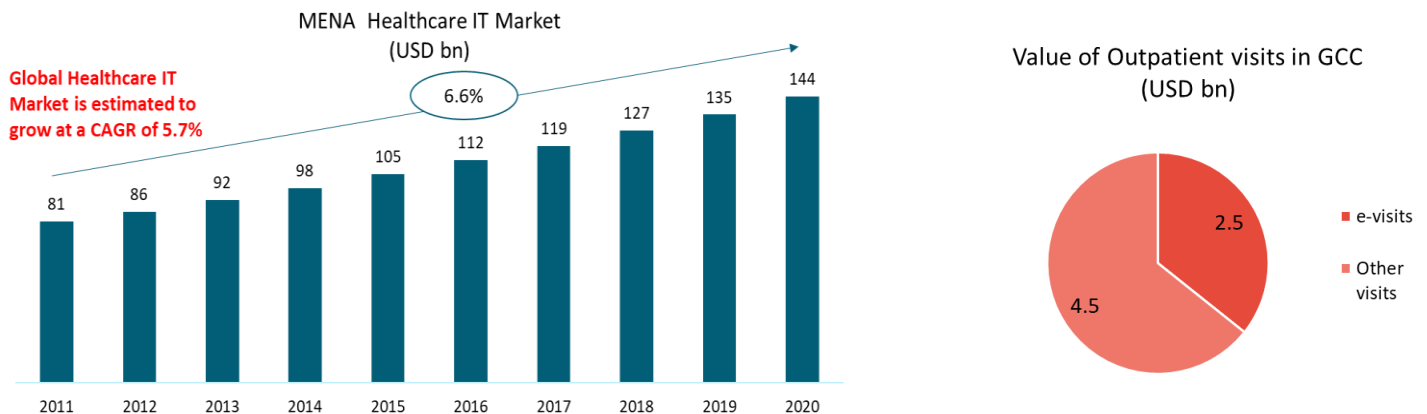
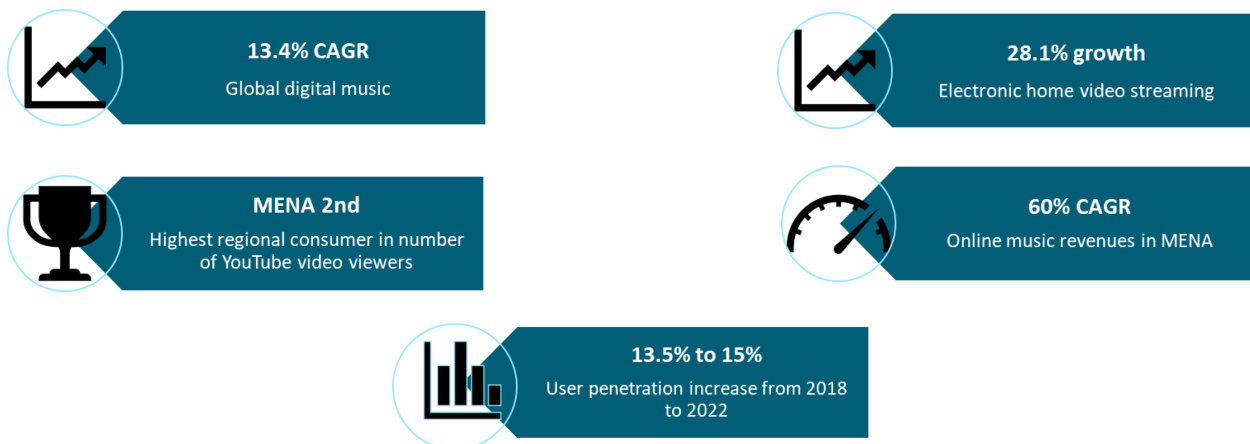


Figure 31. MENA healthcare IT market

The market for healthcare IT in the MENA region has been growing with a strong CAGR of 6.6%, surpassing the global growth of this market which is 5.7%. In the GCC, 35% of outpatient visits are e-visits and are valued at USD \$2.5 bn.

## Media Streaming

Definition: Media streaming is a technology where data is constantly received by the end user from a provider. Media streaming is an alternative to downloading an entire file before viewing it. The latter allows for faster delivery content as most users do not enjoy a fast internet to download multimedia file quickly. Streaming allows client browser to display data before the entire file has been received.



Media streaming can be divided into many categories for further assessment. For example, the global digital music market is growing at a CAGR of 13.4%, while the electronic home video streaming market is growing at more than double that figure at 28.1%. The MENA market is the 2<sup>nd</sup> highest consumer in number of YouTube video viewers. User penetration of media streaming is estimated to become 15% by 2022.

## e-learning

Definition: E-Learning is an education system implemented with the help of electronic resources.

The main markets for e-learning are private schools, corporates, and governments. As of 2016, the revenue for e-learning in the Middle East were USD \$558 million, and it was forecasted to grow at 9.8% year-on-year to reach USD \$1.08 billion by 2023.

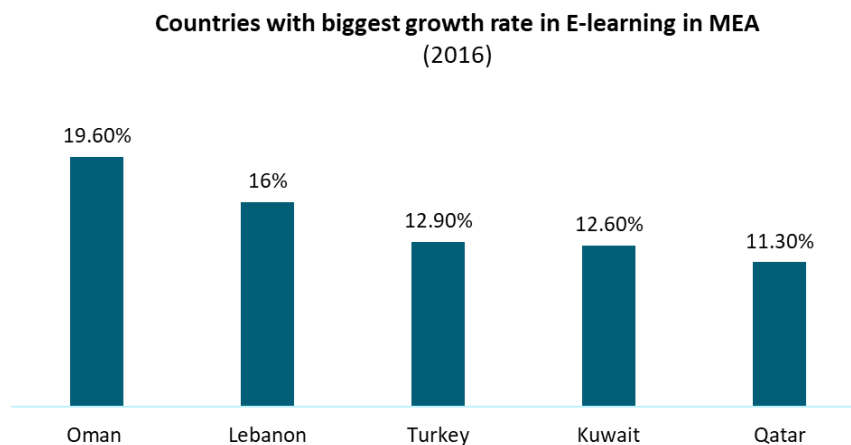


Figure 32. Countries with biggest growth rate in E-learning in the MEA

Lebanon witnessed the second highest growth in e-learning in 2016 at 16%, with Oman capturing the first place. E-learning is directly correlated with education, and Lebanon offers one of the best education systems in the region and in the world, which places it at a competitive edge from others.

## Gaming

Definition: Gaming mainly refers to online digital entertainment available on several platforms mainly on mobile devices and PCs.

The gaming industry growth is mainly driven by a young population as 60% of the Arab population are younger than 25. The increase in internet users to 70 Million (300% increase in the Arab World from 2010-2015) also explains this growth. As smartphone penetration is increasing, the number of gamers will directly increase. The mobile traffic's heavy increase in the MENA supports gaming revenues and online installations. The Middle East has witnessed the highest growth in the world with respect to gaming in 2017, positioning itself as a potential market for this industry.

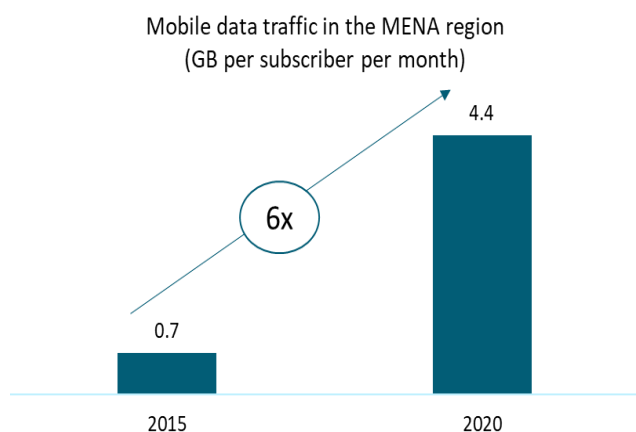


Figure 33. Mobile data traffic in the MENA region

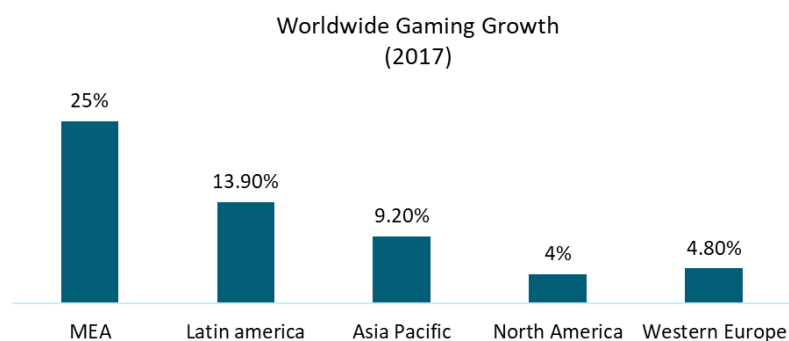


Figure 34. Worldwide gaming growth (2017)

## e-government

Definition: E-government refers to the usage of software solutions, IT services and communication technologies to enhance the efficiency of the public sector organizations.

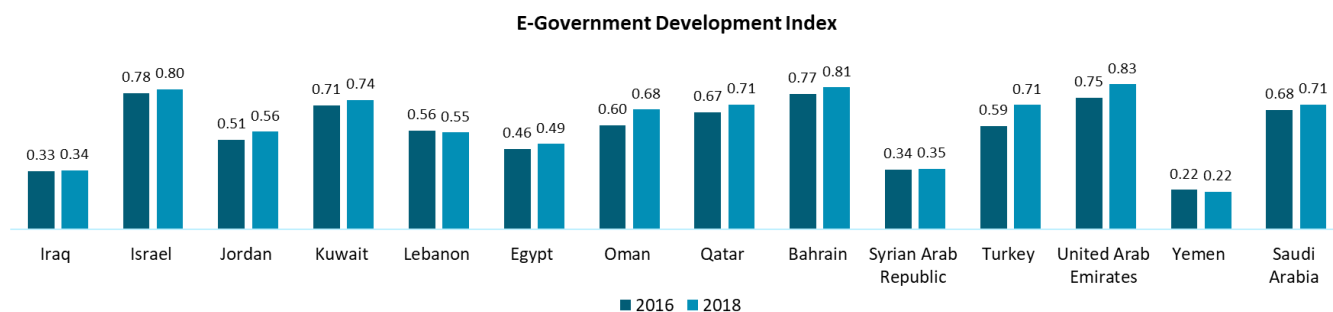


Figure 35. E-government development index

Nations Member States. According to this study, Lebanon and Yemen are the only two countries to have experienced a drop in their index from 2016 till 2018. All other Middle East countries have witnessed a rise in their index.

	2016	2018	Change in rank
Jordan	91	98	-7
Kuwait	40	41	-1
Lebanon	73	99	-26
Egypt	108	114	-6
Oman	66	63	+3
Qatar	48	51	-3
Bahrain	24	26	-2
Turkey	68	53	+15
United Arab Emirates	29	21	+8
Saudi Arabia	44	52	-8

Lebanon is ranked 99<sup>th</sup> globally in the e-government worldwide rank after dropping 26 places from 2016. Among countries in the Middle East, Lebanon had the largest drop in rank. The top performer in the Middle East is the UAE, which ranks 21<sup>st</sup> worldwide in e-government.

## App Development

Definition: App development is the process of developing software for small wireless devices such as smartphones or tablets.

The app development market is directly related to the number of smartphones available in the market. The MENA region is home to countries having some of the highest smartphone penetrations in the world.

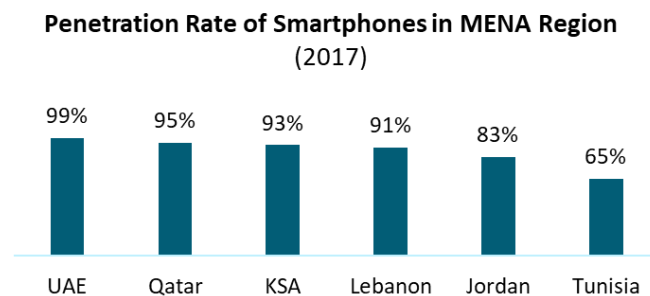


Figure 36. Penetration rate of smartphones in the MENA region

Smartphone penetration in Lebanon is one of the highest in the region, topping out at 91%. The UAE has the highest penetration in the MENA region, and one of the highest worldwide at 99%. Consequently, there are 197 million Arab internet users, with 62% of them preferring content in Arabic. In addition, 3% of digital content is in Arabic. Therefore, as the number of smartphone users is increasing with extremely high penetration rates and overall increase in mobile apps market, there exists huge potential for the development of apps especially those with Arabic content.

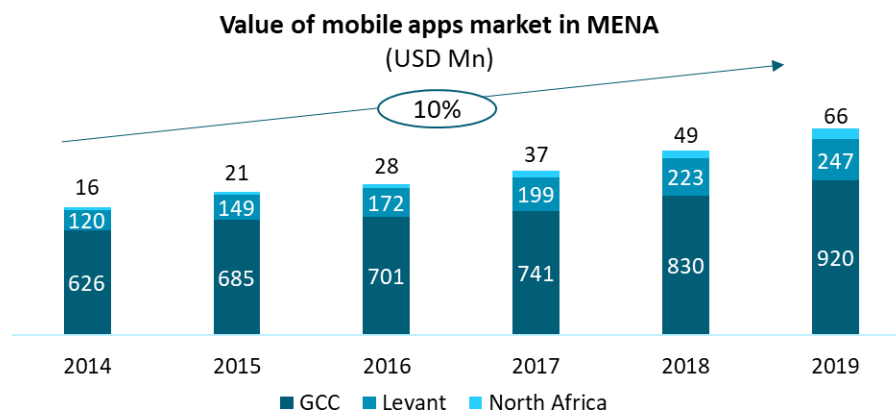


Figure 37. Value of mobile apps market in the MENA

The GCC market for mobile applications is just below \$1 billion, placing it as a huge potential market for mobile app development.

### Web Development

Definition: Web development refers to activities related to the World Wide Web associated with developing websites for hosting via intranet or internet.

The MENA market in Web development is growing and specifically in Lebanon as 76% of software development companies, 67% of web development companies and 66% of mobile application development companies export their products to one or more international markets. 18% of small and midsize enterprises in the United Arab Emirates, 15% in Saudi Arabia, and 7% in Egypt have an online presence (2014). These numbers are highly subject to growth as online presence of companies is becoming more as a need than a sophistication. The need for online Arabic content suggests even bigger opportunities for Arab web development companies.

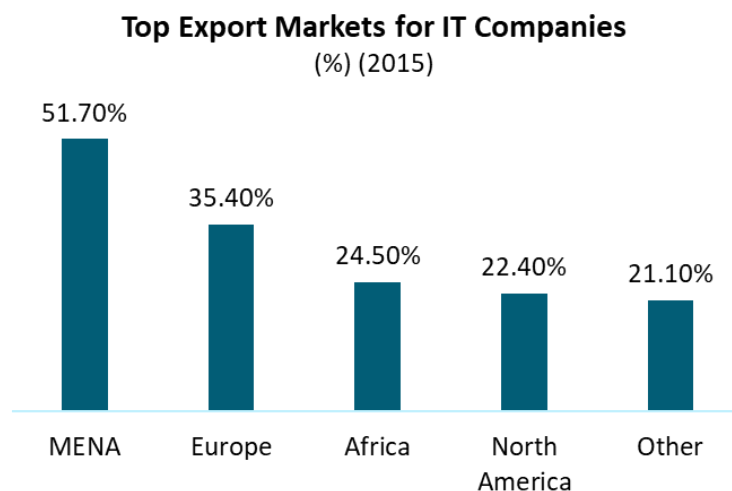


Figure 38. Top export markets for IT companies

### Value Added Services

Definition: Value Added Services (VAS) is a term used in telecom to describe services that are added-on to the core functions of devices. They provide synergies among the range of services already provided by the telecom company.

Some examples of VAS services are online storage, music subscription, on-demand video subscriptions, mobile and gaming apps, and TV shows and movies. The global mobile VAS market is growing at a CAGR of 15.5% to reach USD \$845 billion by 2022. This is due to the fact that revenue from voice calls and traditional telecom services has decreased over the years due to technological advancements and strong competition. Therefore, telecom companies are turning to VAS to differentiate themselves and become more attractive, thus attracting new customers and increasing their bottom line.

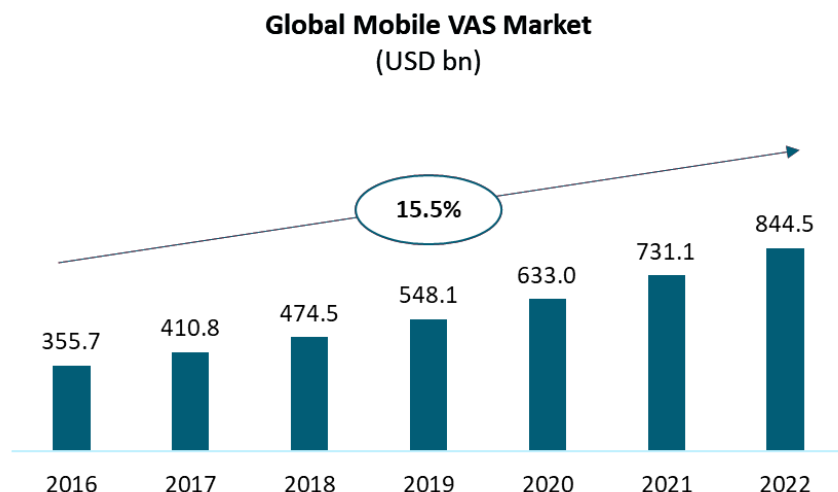


Figure 39. Global mobile VAS market

## SaaS

Definition: Software as a Solution “SaaS” is a software model provided by a third party where applications are made available to customers over the internet with a simple login access. SaaS facilitates installing and running applications on an organization’s computers or in their own data centers. This model reduces several expenses from hardware acquisition, provisioning, maintenance to software licensing, installation and support.

SaaS includes the following services: enterprise search, data center networking, enterprise management, IT asset management, and financial accounting application. As such, the biggest markets for SaaS are Customer Relationship Management, Enterprise Resource Planning, and Business Process Management, in addition to Governments and Advertising.



SaaS market in the Middle East and Africa was valued at \$307 million in 2018, while cloud traffic growth rate grew at 57% CAGR from 2012 till 2017 for the same region. \$4.7 billion was spent on public cloud services in the MENA region from 2014 to 2018.

## Cybersecurity

Definition: Cyber-security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks.

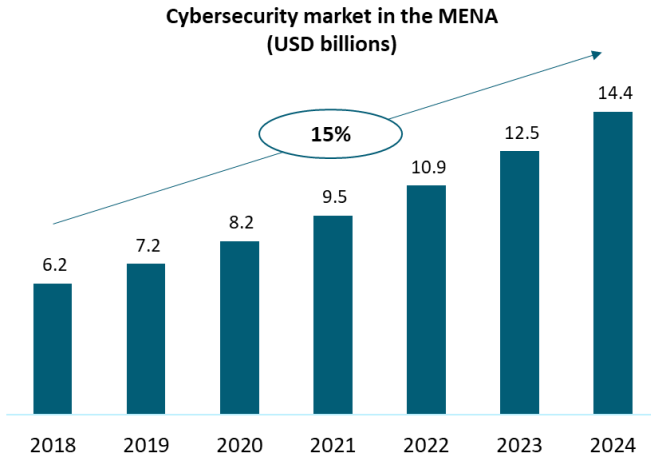


Figure 40. Cybersecurity market in the MENA



The cybersecurity market in the MENA region is estimated to reach USD \$14.4 billion by 2024 with a CAGR of 15%.

Companies use cybersecurity for different reasons including: Threat Intelligence and Response Management, Identity and Access Management, Data Loss Prevention Management, Security and Vulnerability Management, Unified Threat Management, Enterprise Risk and Compliance, Managed Services, and Professional Services.

## Architecture

Definition: Architecture is both the process and the product of planning, designing, and constructing buildings or any other structures.

The worldwide architecture services market has been growing steadily with a CAGR of 4.22%, and is expected to reach USD \$274 billion by 2022, up from USD \$223 billion in 2017.

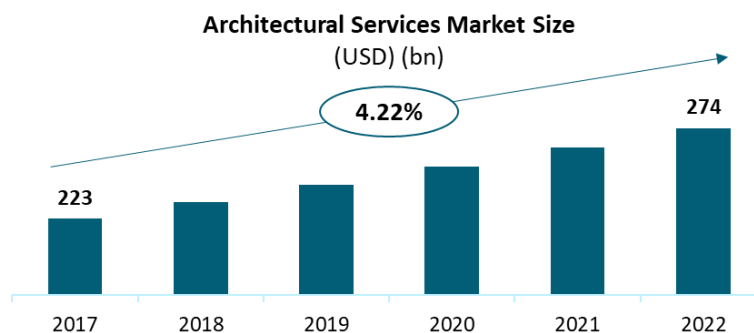


Figure 41. Architectural services market size



The different architectural services have different shares of this market, with construction and project management having the biggest share by a large margin.

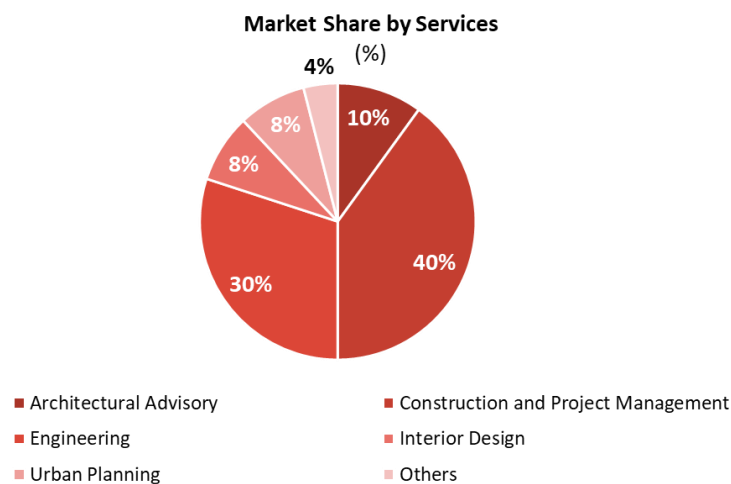


Figure 42. Market share by services

Lebanon is a leading figure in architecture in the MENA region due to its historical expertise in the field and some of the best design firms in the region. Some examples of these firms are:



Erga’s vision is to lead the architecture of our time onto new dimensions focusing on a sustainable development in order to meet present and future needs



Dar Al-Handasah (Shair and Partners) is dedicated to planning, designing and engineering facilities, installations and structures that contribute to the sustainable advances of communities



AAA is an architectural and urban design firm known for distinctive spaces and unique architectural works in Lebanon and abroad

Semi-conductors

Definition: A semi-conductor is a solid substance that has a conductivity between that of an insulator and that of most metals. Semiconductors are used to fabricate chips for every electronic device, including computers and cell phones.

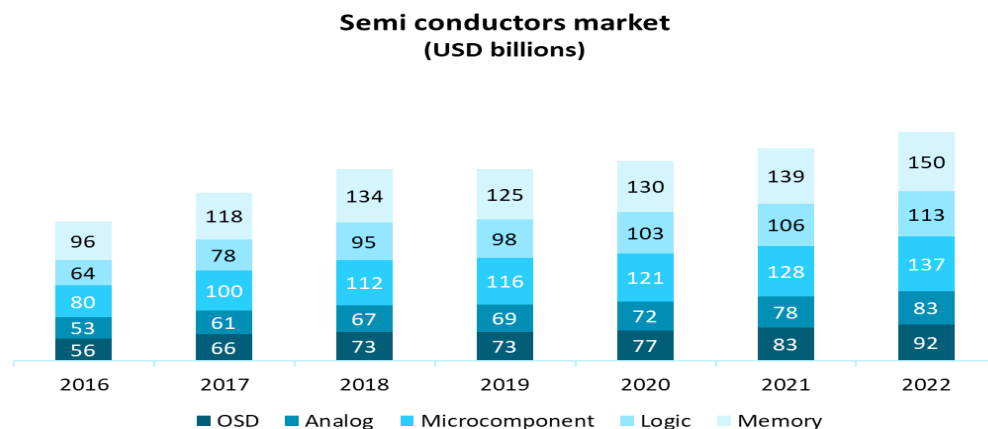


Figure 43. Semi conductors market

The semi-conductor market is segmented into 5 types of semi-conductors. Memory takes the biggest share of the market with micro components coming in second and logic coming in third. Fourth and fifth place are occupied by OSD and analog respectively. The demand of these chips is expected to grow over the coming years, especially the chips related to AI development.

The biggest players in this market are Samsung, Intel, Nvidia, and Qualcomm.

## Fashion Design

Definition: Fashion design is the art of applying design, aesthetics and natural beauty to clothing and its accessories.

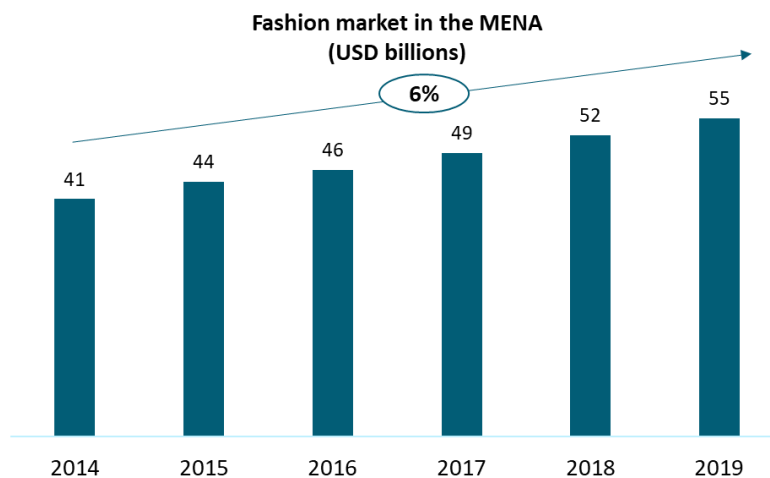


Figure 44. Fashion market in the MENA

The fashion design market has been growing since 2014 at a CAGR of 6%, and will reach USD \$55 billion by 2019. Lebanon is the leading country in the region with regards to fashion design. It established its name in the industry through the works of some leading fashion designers whose reputation has reached international standards:



### ***Elie Saab***

- A famous Lebanese fashion designer specialized mainly in bridal couture
- Has workshops in Lebanon, France and Italy



### ***Zuhair Murad***

- A famous Lebanese fashion designer
- Has workshops in Lebanon, UAE, France and England



### ***Nicolas Jebran***

- A famous Lebanese fashion designer
- Has workshops in Lebanon and UAE

## E-tourism

**Definition:** E-Tourism is the application of ICT in the tourism industry, which includes digitization of all processes and value chain in the tourism, travel, hospitality and catering industries.

The tourism industry in the MENA region has grown at a CAGR of 7% from 2012 to 2017.



Figure 45. Int tourist arrivals and receipts

The number of international tourist arrivals in the MENA region has increased from 70 millions in 2012 to reach 87 millions in 2017. At the same time, the international tourism spending has increased from 58 USD billions to reach 80 USD billions in 2017.

This huge growth in the tourism sector will induce a growth in the E-tourism sector.

The middle east currently hosts a big number of E-tourism startups. Some startups are shown below:

Holiday ME



My middle east



Yamsafer



Tajawal



The travel  
attaché



Irhal



## Insurtech

Insurance technology or insurtech is the technology designed to increase the efficiency and efficacy of insurance companies.

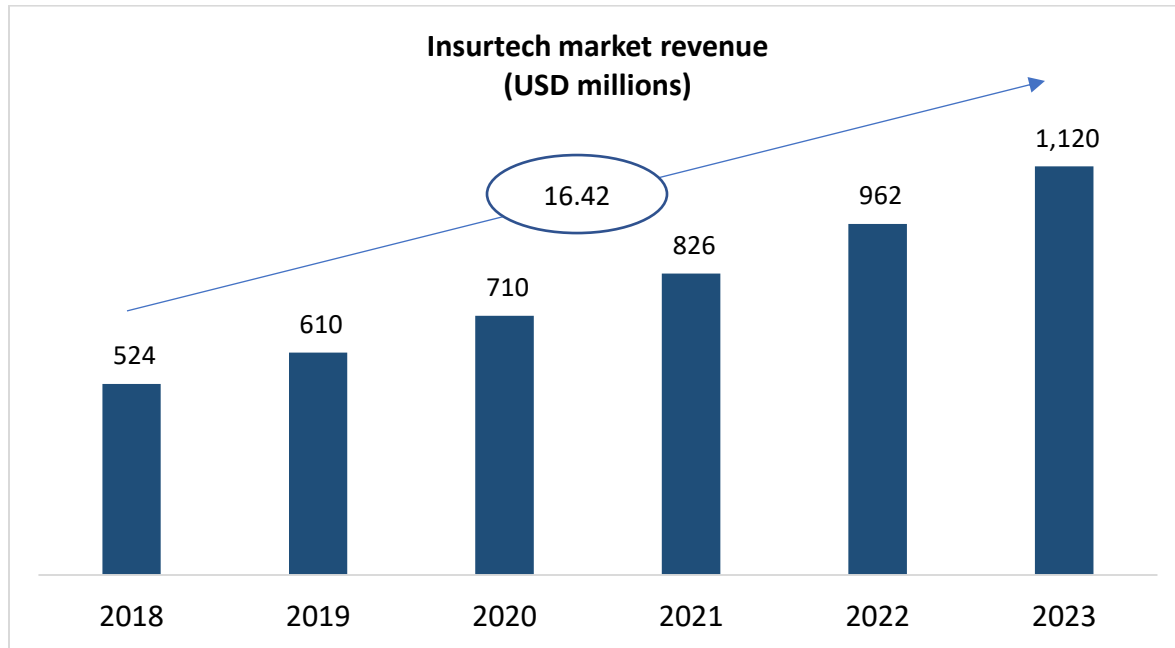


Figure 46. Insurtech market revenue

The insurtech market revenue reached 524 USD millions in 2018 and it is expected to increase at 16.42% CAGR to reach 1,120 USD millions in 2023.

Insurtech startups are using artificial intelligence in their tasks in order to reach better pricing models and better quality of services. There is also an interest in the development of apps to pull disparate policies into one platform for management and monitoring, creating on-demand insurance for micro-events like borrowing a friend's car, and the adoption of the peer-to-peer model to both create customized group coverage and incentivize positive choices through group rebates.

Aqeed and Democrance are two insurtech companies working in the GCC region:



- Aqeed is a new insurtech platform launched in the UAE.
- Aqeed allows customers to buy and compare car insurance in a matter of minutes through the platform



- Democrance is an insurance technology company working to make insurance accessible and affordable to consumers via mobile and digital channels

## E-commerce

Definition: Electronic commerce or e-commerce is a business model that lets firms and individuals buy and sell things over the internet. E-commerce operates in all four of the following major market segments:

- Business to business
- Business to consumer
- Consumer to consumer
- Consumer to business

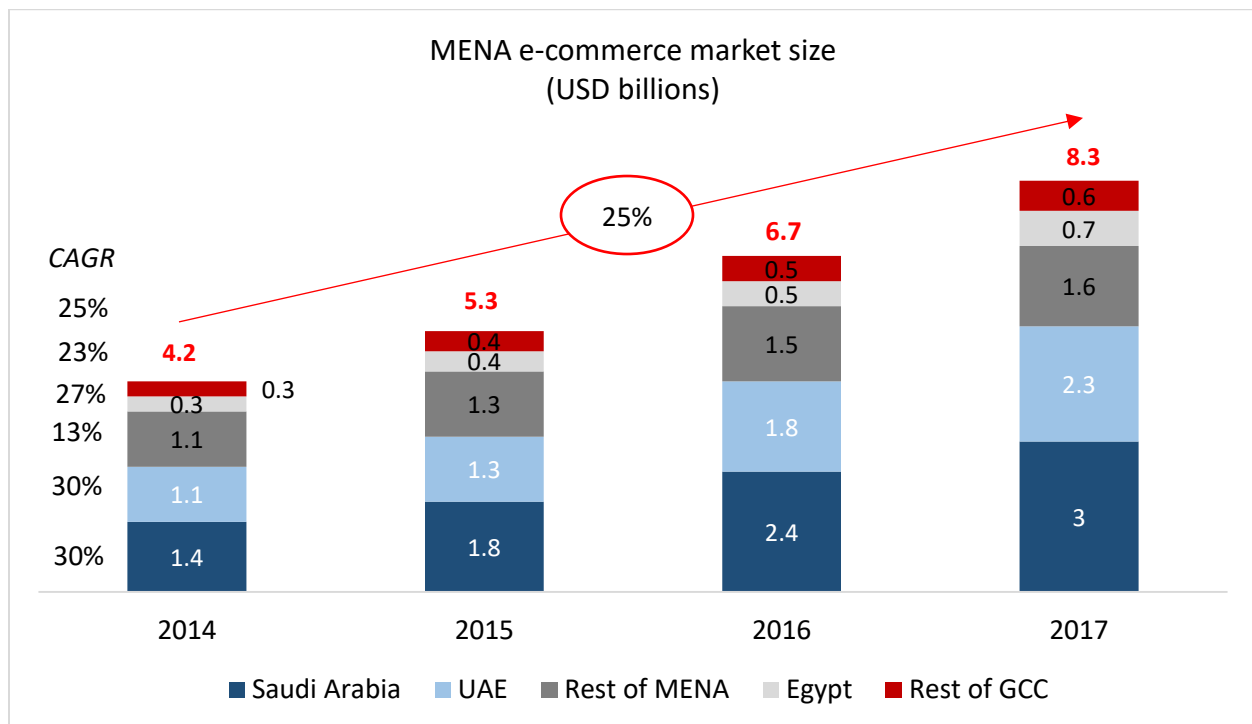


Figure 47. MENA e-commerce market size

The MENA e-commerce market size grew from 4.2 USD billions in 2014 to reach 8.3 USD billions, at a CAGR of 25%. UAE and Saudi Arabia constitute the biggest markets in the MENA region for the E-commerce and both markets grew at a rate of 30% from 2014 to 2017. Egypt is also a big market for the e-commerce industry and it is growing at 23% CAGR.

The MENA consumer, and notably the GCC consumer, is among the most connected and digitally savvy in the world. The UAE and KSA have some of the highest levels of Internet, smartphone and social media penetrations globally, while Egypt has one of the highest levels of time spent online. Those values are shown in table 7.

Table 6. The internet connectivity of some counties

	Internet penetration	Time spent online daily	Social media penetration
UAE	91%	7 h, 49 min	99%
Saudi Arabia	73%	6 h, 45 min	75%
Egypt	43%	8 h, 10 min	40%
US	85%	6 h, 30 min	71%
China	59%	6 h, 30 min	65%

This shows that the MENA region is ready for the use of the e-commerce technology.

Lebanon is also a fertile land for the use of e-commerce activities. For this reason, many players in Lebanon has appeared in the past years including:



Lébêlik

Macrotronics

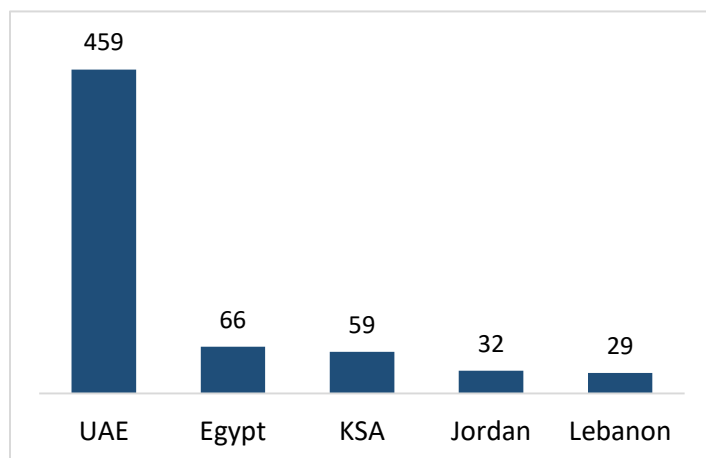


## AdTech

**Definition:** Ad tech also known as advertising technology refers to different software services, digital tools and data analytics used for delivering online ads.

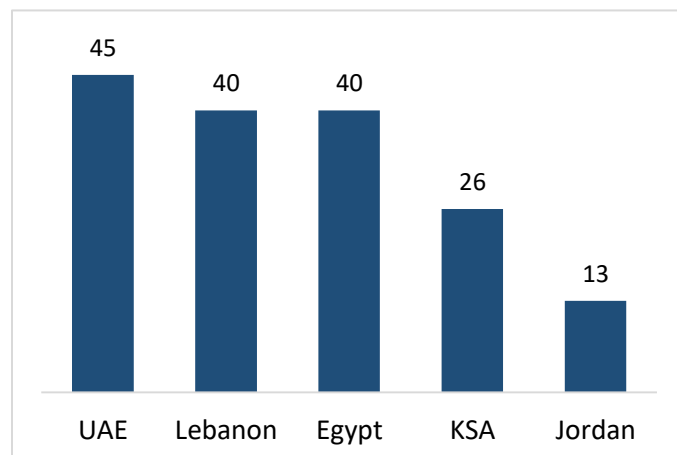
In one sense, ad tech involves items like digital banner ads and other conveyance methods for advertising. However, ad tech also includes the back-end systems that help direct advertising to a target audience. This can include full marketing platforms and analytics systems, which are the "smart engines" of digital advertising campaigns.

**Ad Tech Spending in 2018**  
(USD Mn)



*Figure 49. Adtech spending in 2018*

**Ad Tech Deals in Top 5 MENA Countries in 2018**



*Figure 48. Ad Tech Deals in Top 5 MENA Countries in 2018*

The number of Ad Tech investors in MENA region increased by 25% between 2012 and 2018.

UAE constituted the biggest market for AdTech spending with a value of 459 USD millions followed by Egypt with 66 USD billions whereas Lebanon spent only around 29 USD millions.

UAE was home for 45 contracts in 2018 followed by Lebanon and Egypt both with 40 contracts.

## Blockchain

Definition: A blockchain is a growing list of records, called blocks, that are linked using cryptography. By design, a blockchain is resistant to modification of the data. It is "an open, distributed ledger" that can record transactions between two parties efficiently and in a verifiable and permanent way.

Blockchain technologies can be used in different applications including:

- Cryptocurrencies
- Smart contracts
- Financial services
- Video games
- Supply chain

Arab countries are showing a high interest in blockchain technologies.

In December 2018, the National Bank of Kuwait (NBK) launched a remittance service using blockchain technology from U.S.-based Ripple Labs.

In 2017, the government of Oman launched the Blockchain Solutions and Services Co. (BSS), a body with the mission of promoting blockchain infrastructure, adoption and implementation in the sultanate. Dubai's smart government initiative aims to record all government transactions on the blockchain, an initiative that could amount to savings of over \$1.5 billion in document processing and more than 25 million hours in lost productivity.

Saudi Arabia's central bank, the Saudi Arabian Monetary Authority, has declared a joint initiative with the Central Bank of the United Arab Emirates to use blockchain to issue a digital currency for cross-border transactions.



#### 4.1.4- Prospect tenants

Different international companies from the chosen sub-sectors could be attracted to this techpark.

<i>Ant Financial</i> Mobile and online payment platform	<i>Gameloft</i> Video game development and publisher	<i>Artefact</i> Media activation & creation, consulting & data science,	<i>Sony Interactive Entertainment</i> PlayStation-exclusive publisher
<i>Qudian</i> Online credit provider	<i>Oracle</i> Cloud applications and platform services	<i>Wavemaker</i> Audience sciences, performance, content, media	<i>eGovernment Solutions Inc.</i> Fully integrated software platforms
<i>Avant</i> Online lending platform	<i>Microsoft</i> Develops licenses, supports and sells software, services	<i>Huawei</i> VAS cloud platform and framework	<i>Cisco</i> Connection of learning spaces across schools and
<i>Siemens Healthineers</i> Diagnostic and therapeutic imaging, laboratory	<i>McAfee</i> Cybersecurity Software, Services	<i>Fortinet</i> Cybersecurity Software, Services	<i>Adobe Systems</i> Software design and e-tools for education
<i>Agfa Healthcare</i> Solutions for imaging, integrated care, and healthcare IT	<i>YouTube</i> Online video sharing website	<i>Appster</i> iOS, Android and server side technologies	<i>VTEX</i> Cloud based E- commerce platform provider
<i>Intellectsoft</i> Industry specific software solutions and app development	<i>Netflix</i> Online movies, series and TV shows	<i>Shopify</i> Social commerce and mobile shopping	<i>eGov Systems</i> Web-based payment portals and integrated revenue

Regional companies could also be attracted to this techpark.

<i>Paytabs</i> Online payment processing solutions	<i>Active DMC</i> Public and influencer relations, social & digital marketing,	<i>ShopGo</i> E-commerce solution provider	<i>ISEC</i> Integrated solutions for E-Gov applications
<i>Souqalmal.com</i> Financial products comparison site	<i>Future Tech Media</i> Digital ad solutions and technology, mobile marketing,	<i>Souq.com</i> Largest E-commerce platform in MENA region	<i>Tadafur</i> E-Government consultant and solution provider
<i>Beehive</i> Peer-to-peer (P2P) lending platform	<i>beIN Connect</i> Satellite & online provider of football content expanding	<i>Capytech</i> E-learning content and learning management systems	<i>Murex</i> Technology solutions for trading, risk management,
<i>Doctoori.net</i> Arabic language health and well-being platform	<i>Starz Play</i> Online movies, series and TV shows	<i>iLearn</i> E-learning and education technology, learning management	<i>Focus</i> Enterprise resource planning (ERP) management software
<i>Mobile Doctors</i> 24-7 Population Health Management through telemedicine, telemonitoring and home health	<i>Falafel Games</i> Web and mobile MMO games with deep social interaction	<i>Game Power 7</i> Manufacturers, marketers and publishers	<i>Incubaysis</i> Mobile app development company
<i>Intellectsoft</i> Industry specific software solutions and app development	<i>Fingent Corp</i> Enterprise software, web and mobile development	<i>Takarub</i> Innovative mobile value added services and content	<i>Cryptika</i> Cybersecurity Softwar e, Services

## 5- Concept and recommendations

An 8-element approach is used to define the techpark's concept and value proposition. Figure 52 is a schematic representation of the project's concept components.

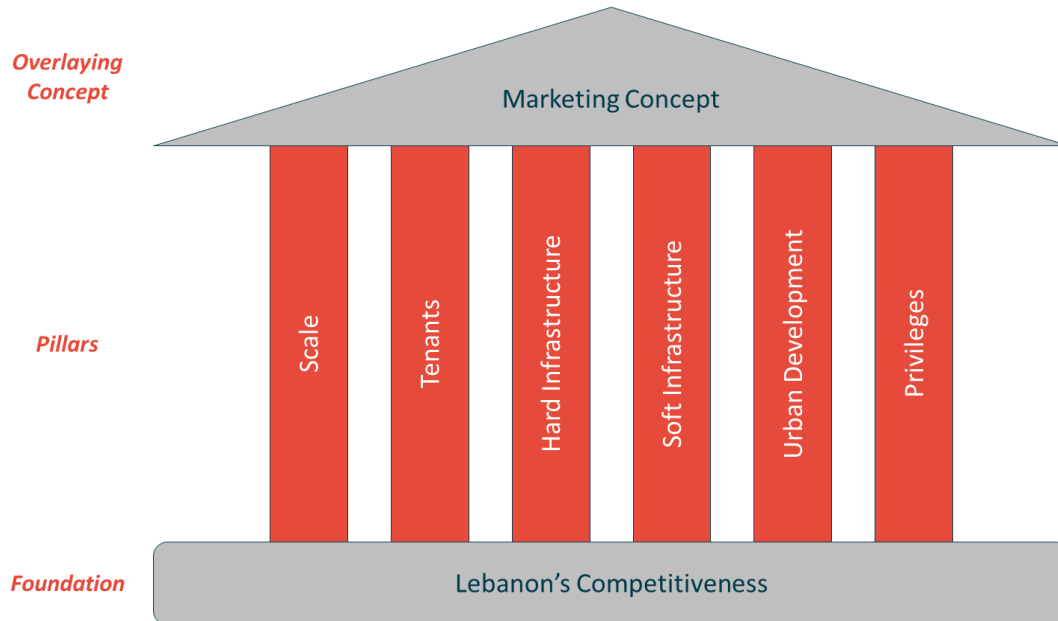


Figure 50. The techpark's concept components

### 5.1- Foundation

Leveraging Lebanon's competitive advantages will serve as a basis for developing the techpark's concept and value proposition. Those competitive advantages include:

- High quality education
- Strong financial system
- Reputable healthcare system
- Entrepreneurial landscape
- Back up support from the diaspora
- Competitive labor cost
- Access to growing regional market
- Highly creative society

### 5.2- Pillars

#### 5.2.1- Scale

The project's area will range between 0.05 Km<sup>2</sup> and 0.08 Km<sup>2</sup> (to be verified after the site analysis) and it should create between 800 to 3,000 jobs.

The project concept should be a mixture between R&D and engineering and development.

Having this mixture will bring a lot of benefits:

- Create jobs suitable to the local talent
- Increase the exports
- Bring back the Lebanese diaspora

- Empower the Lebanese economic activities
- Find solutions for the main Lebanese problems (electricity, garbage, heavy traffic...)
- Increase innovation/patents with commercialization potential
- Foster an autonomous economy

### 5.2.2- Tenants

The tenants pillar will cover the **tenant's maturity** and the **targeted sectors**.

The project will host a mixture of startups, SMEs and mature corporations with a high focus on SMEs.

It is estimated that around 50% of the tenants to be SMEs, 25% startups and 25% mature corporations.

The tenants will operate within the boundaries of the 20 qualified sub-sectors:

- Fintech
- SaaS
- E-government
- E-health
- AdTech
- Web development
- Value added services
- Media streaming
- E-tourism

- Internet real estate
- Fashion design
- Blockchain
- Security
- Insurtech
- App development
- Gaming
- Ecommerce
- Design of semi-conductors

### 5.2.3- Hard infrastructure

The techpark should provide its tenants best in class hard infrastructure.

Regarding the data & telco, the ministry of telecommunications should provide the techpark a fiber optic network with a high-speed internet up to 100 Mbps and an IP based telephony system. In plus, the techpark should contain a tier 3 data center.

Concerning the utilities, the techpark should provide its tenants continuous power supply through backup UPS and secondary power generators. And in order to optimize the water utilization, the techpark should contain a water treatment plant.

In addition, the techpark should contain all the safety and security systems in order to protect the companies and their employees.

The Ministry of Public Works & Transportation should provide an adequate road network to and from the park to facilitate the techpark's accessibility. In addition, the techpark should provide its tenants internal shuttle bus services, parkings and pedestrian friendly roads.

### 5.2.4- Soft infrastructure

The soft infrastructure pillar will cover 4 key sections:

- Government services
- Business services
- Talent pipeline
- Incubation and acceleration

Starting with the government services, the techpark should provide its tenants **one stop shop services** to simplify the paperwork demanded from those tenants. This one stop shop will include fast-company registration, licensing services and follow-up at MOF, municipality, social security and payment of utilities bills including EDL and Ogero. In addition, **intellectual property management services** should be provided to the techpark's tenants.

Similarly, this techpark will provide its tenants a long list of business services including:

Administrative	<ul style="list-style-type: none"><li>• Event planning, catering, accommodation support</li><li>• General guidance for tenants</li><li>• Scheduling</li><li>• Secretary</li></ul>
Auditing	<ul style="list-style-type: none"><li>• Financial statement examination and evaluation</li><li>• Risk Assessment</li><li>• Internal control on policies and procedures</li><li>• Business plan support and operational processes</li><li>• </li></ul>
HR	<ul style="list-style-type: none"><li>• Recruitment, screening and hiring</li><li>• Update of tenant's records</li><li>• Preparation of techpark policies, procedures, laws and standards for tenants to be aware of and updated</li><li>• Quality, safety, health, environment in the techpark</li></ul>
Accounting	<ul style="list-style-type: none"><li>• Preparation of financial records</li><li>• Bookkeeping</li><li>• Tax preparation</li><li>• General administrative work</li></ul>
Finance	<ul style="list-style-type: none"><li>• Assessment of financial statements</li><li>• Insurance procurement</li><li>• Advisory financial services</li><li>• Management of funds, assets and liabilities with proper allocation</li></ul>
Legal	<ul style="list-style-type: none"><li>• Advisory roles concerning business transactions</li><li>• Interpretation of laws, rulings and regulations for individuals and businesses</li></ul>
IT	<ul style="list-style-type: none"><li>• Network management and maintenance</li><li>• Software installations</li><li>• General computer maintenance</li><li>• Organization, implementation and support of computer systems, networks and data communication systems</li></ul>
Consulting	<ul style="list-style-type: none"><li>• Solving business issues</li><li>• Maximizing growth and overall business performance</li></ul>

In addition, the techpark should provide its tenants a **talent pipeline** through a driven collaboration and partnership with top-class universities in Lebanon. This will help those universities to offer their students jobs positions after graduation and will enable those companies to benefit from top talented students. The techpark should also open its research labs to be used by the Lebanese universities in order to develop new projects and to do research activities.

And to build a successful entrepreneurial environment, the techpark should provide **incubation and acceleration** services to its tenants especially for startups. Those service will include mentorship, training programs and workshops. In plus, the techpark should offer funding opportunities to its tenants.

### 5.2.5- Urban development

The techpark will have a modern architecture and all buildings will have sustainable designs that may include LEED standards, BMS, and smart features.

In addition, the techpark will contain a wide variety of amenities occupying different percentages from the construction area. Those amenities and their occupancy percentages are shown in figure 53.

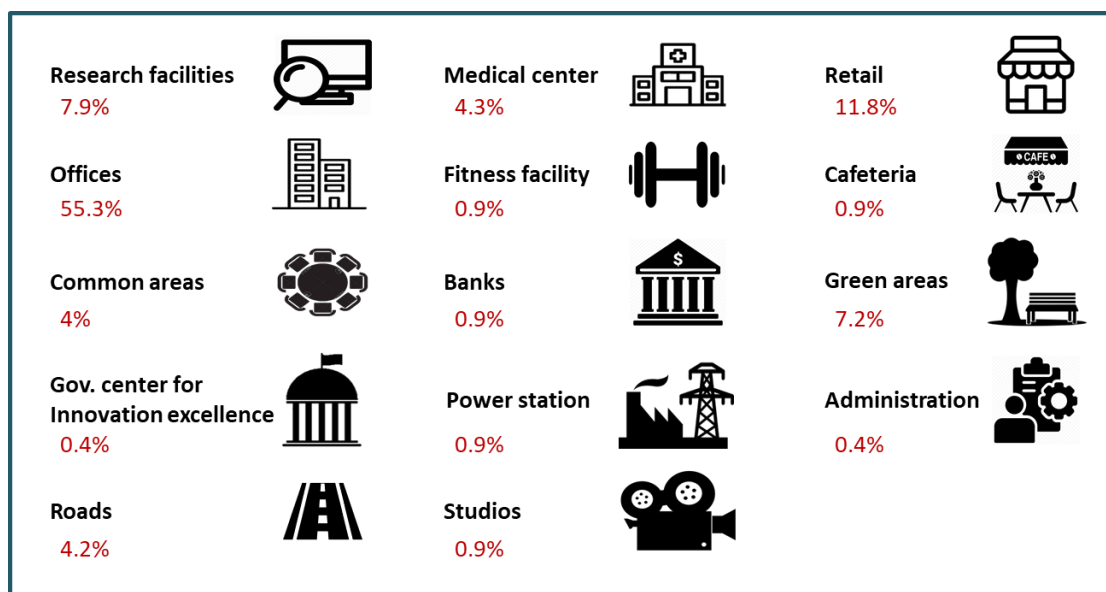


Figure 51. The different amenities to be included in the techpark

### 5.2.6- Privileges

In order to attract local and global investments the techpark should provide privileges to the potential investors. Six main components will constitute the core of those privileges:

- A. Incentives regarding income tax, corporate tax, sales tax, etc.
- B. Customs regulations
- C. Labor regulations
- D. Funding access
- E. IP protection
- F. Investor protection and disclosure of company transactions

## A. Incentives regarding income tax, corporate tax, sales tax ...

The techpark tax incentives should be based on the existent ones and should be optimized to attract tenants.

### Existent incentives

#### **Applicable in Lebanon:**

- Investment law 360: ICT startups exempted from corporate taxes for a 10-year period

#### **Applicable in TSEZ:**

- 100% exemption on corporate profit tax (provided that not less than 50% of the workforce is Lebanese and the value of fixed assets per capital is greater than USD 300,000)
- 100% exemption on withheld tax on salaries for employees of tenants and on social security contributions
- 100% exemption on building permit fees and built property tax
- 100% exemption on shares and bonds issued by companies with TSEZ

### Proposed additional incentives

- All the startups located in the techpark should be exempted from corporate taxes for a 10-year period
- Lower fees associated with company formation, branch registration and licensing for companies located in techpark
- 50% of the social security fees paid by the startups should be covered by the government for the first 5 years

Providing tax incentives especially (for startups) will encourage local and foreign investments in Lebanon. In addition, providing incentives on shares and bonds will protect companies from bankruptcy.

## B. Customs regulations

Import and export tax incentives should be provided to the techpark tenants.

### Existent incentives

- **Applicable in TSEZ:**
- 100% customs exemption on imported raw material
- 100% exemption on VAT and excise tax for goods and services destined for exports

### Proposed additional incentives

- Replace import and export paperwork with easy online operations
- Make agreements with regional and international countries to provide the techpark tenants easy and efficient access to global markets

Providing tax incentives on exports will bring many benefits. First, it will make the Lebanese exports more competitive in the global markets by reducing their costs. In addition, it will increase the Lebanese

exports, this will decrease the trade balance deficit and will increase the foreign currencies inflows to the Lebanese economy.

### **C. Labor regulations**

The techpark should provide enhanced labor regulations to attract local and global companies.

#### **Existent regulations**

- Flexible labor laws with up to 50% foreign labor allowed
- No nationality conditions for the board of directors representation
- Equal Treatment between foreign and local investments
- Work permits and Visa delivery: Issue work permits facilitate the visas for foreign employees

#### **Proposed additional regulations**

- Online registration for foreign employees
- Propose laws to facilitate obtaining work permits
- Remove laws that limits employees from certain nationalities to certain type of jobs

Enhancing labor regulations is a key factor to attract multinational companies to Lebanon. In addition, facilitating paperwork for the labor registration and permits increases the ease of doing business.

### **D. Funding access**

Providing funding opportunities is mandatory to launch startups. For this reason, the government should collaborate first with venture capital companies in order to bring funding opportunities to startups. In addition, the government should make agreement with local banks to provide loans to startups with reduced rates. Also, it could collaborate with global organizations to provide grants and funding programs to the techpark's tenants.

### **E. IP protection**

The government should propose and enforce intellectual property protection laws to protect the techpark tenants inventions and attract international R&D firms to Lebanon.

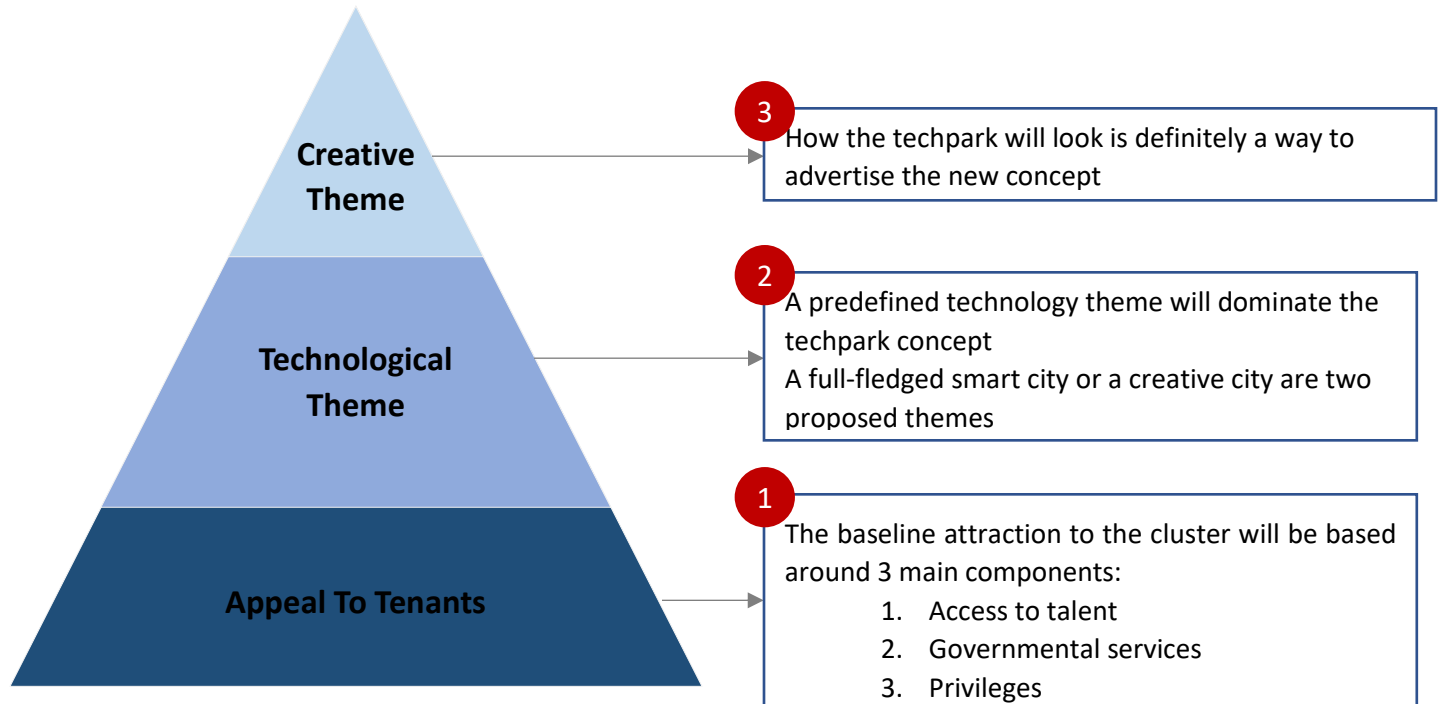
### **F. Investor protection and disclosure of company transactions**

The government should enforce transparency to protect and encourage local and global investors.



### 5.3- The marketing concept

The marketing concept is based on 3 founding blocks:



#### 5.3.1- Appeal to tenants

The cluster will attract tenants by providing them a talent pipeline, governmental services and additional privileges.



First, the project should build partnerships with top-class universities in Lebanon in order to enable its tenants to hire the best students. The techpark will also open its labs and testing facilities for the universities students in order to allow them to develop research projects and new ideas.

Regarding the governmental services, the cluster will provide its tenants all the needed services in order to facilitate their tasks. First, the project will provide a one stop shop that includes utilities payment (electricity bills, water and bills phone bills) in addition to licensing and registration services. The cluster will also offer its tenants Intellectual property management services.

In terms of privileges and economic incentives, the techpark will offer the existent ones (incentives available in Lebanon and in TSEZ) in addition to new incentives that will include mainly tax incentives, additional customs regulations and enhanced labor regulations.

### 5.3.2- The technological theme

A predefined technology theme will dominate the techpark's concept. Two main themes could apply to the project's concept:

Smart City	Creative City
	
<ul style="list-style-type: none"><li>• Use of innovation and technology to enhance city management and improve quality of living, sustainability, efficiency, and safety</li><li>• Smart city initiatives in mobility, buildings, utilities, health, finance, education, government, retail, etc.</li><li>• Heavy reliance on disruptive technologies like artificial intelligence, internet of things, robotics, 3D printing, blockchain, big data, etc.</li></ul>	<ul style="list-style-type: none"><li>• Modern and creative architecture used for the buildings design</li><li>• Well-planned city layout with green and mixed areas</li><li>• Preference of walking, bicycle, cart, and transit over automobiles</li><li>• The city could include museums and paintings exhibitions</li></ul>

### 5.3.3- Creative theme

The techpark's architecture will further contribute to its uniqueness. A modern architecture will be used for the project development. The project's buildings should be a mixture between mid- and high-rise buildings and should be distributed symmetrically across the land, creating an organized geometrical form. In addition, all buildings should be Silver LEED and equipped with smart facilities management features.

All the buildings will be surrounded by green spaces and gardens to give the project's tenants the ability to have a walk and meet with each other in addition solar panels will be mounted on all the project's buildings.

Finally, the techpark concept is summarized in figure 54.

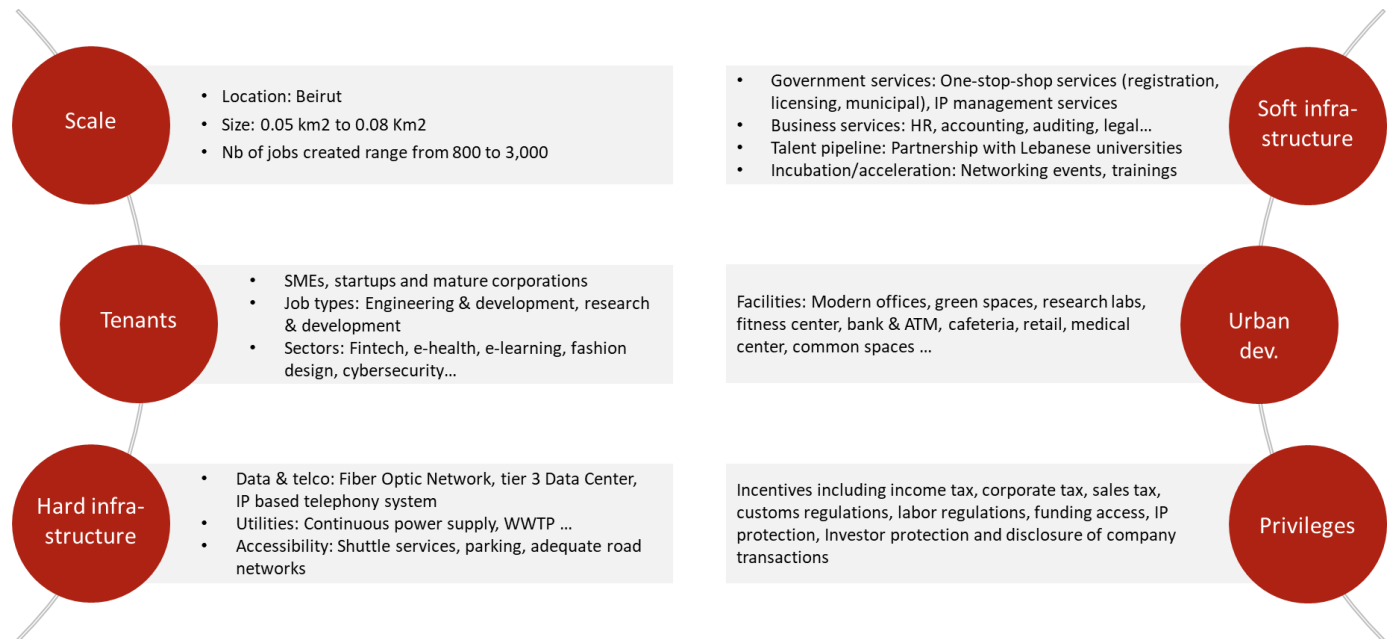


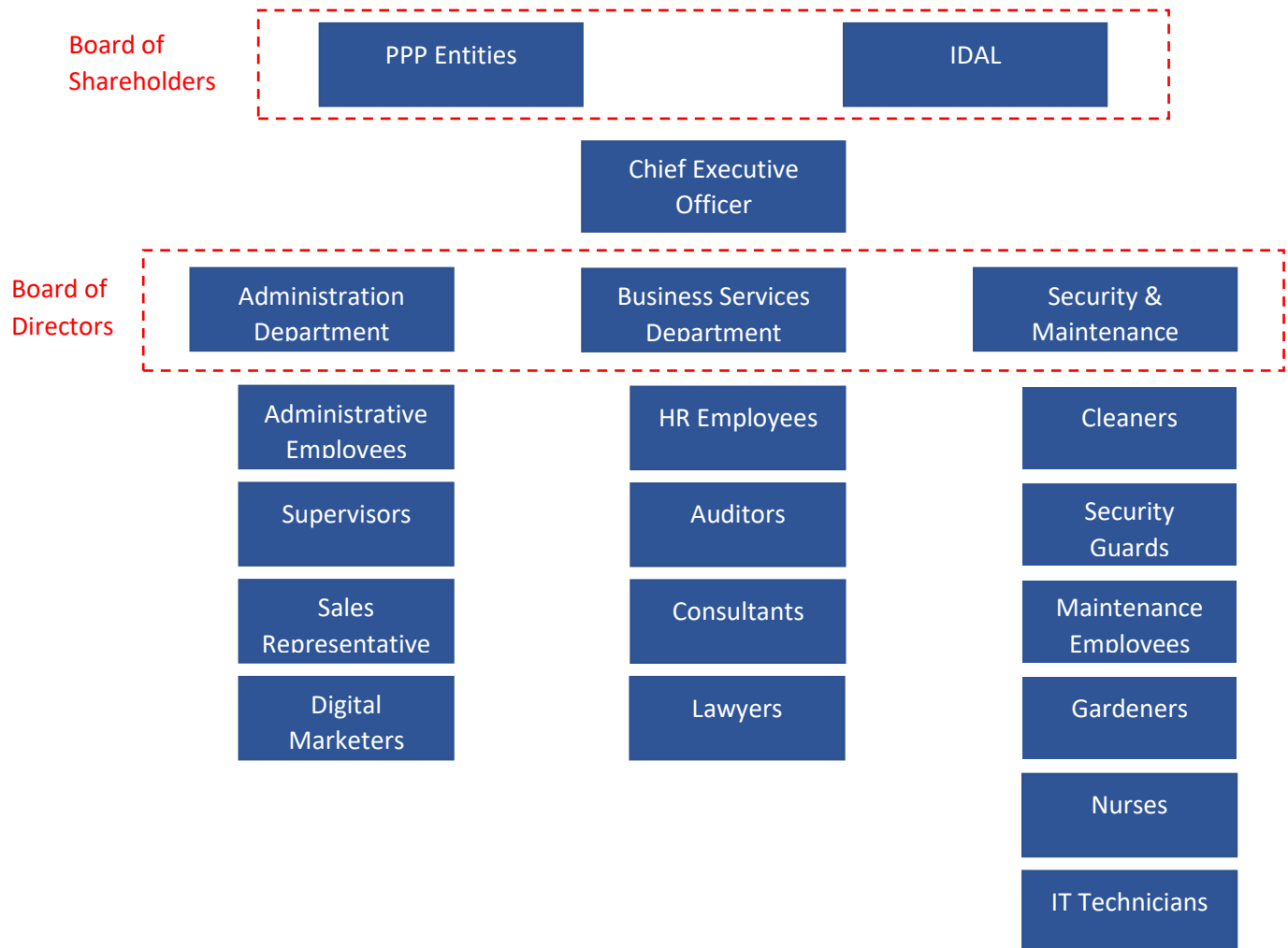
Figure 52. Summary of the techpark's concept

## 5.4- Operating model

The operating model leverages 4 main areas:

- A. Organization: structure, roles and responsibilities
- B. Processes: how work is executed in the organization and how information flow across levels
- C. Governance interactions: decision rights, decision-making authority, board and bodies
- D. People and culture: how people think and feel in the organization and what motivate them

### A. Organization: structure, roles and responsibilities



**Roles & responsibilities are assigned to each team member:**

**Board of Shareholders:**

- The board of shareholders will monitor progress and financials, and will appoint the CEO

**Chief Executive Officer:**

- The CEO will follow up the construction phase of the project and will coordinate with the construction company
- The CEO will be in charge of the day-to-day operations

**Board of Directors:**

- The board members will follow up the construction phase of the project and will coordinate with the construction company
- They will set the rent and the business services' fees for each year
- They will follow up companies' registration and confirm if they are eligible to obtain the incentives offered to the project's tenants
- They are responsible for recruiting employees

**Administrative Employees:**

- The administration is responsible for receiving the new companies' applications
- The administration will support the companies in case of any administrative issue
- The administration will collect the rent and business services' fees from the tenants

**Supervisors:**

- Supervisors will oversee many areas of the project including labs, meeting rooms, and studios
- They will take care of rooms (labs, studios, and meeting areas) reservation
- They will supervise the rooms maintenance activities and will check the presence of all components/ items in those rooms

**Sales Representatives:**

- Sales representatives are the point of contact between the cluster's management and the companies
- They will support and follow up the company's selection & registration activities
- They will set the rent and services fees

**Digital Marketers:**

- The marketing team will be responsible for planning/ organizing all marketing campaigns (offline & online campaigns)
- They will launch branding and tactical campaigns to promote the cluster and support rental sales
- Digital marketers will operate the official portal and social media accounts. In other words, they will post all the events and updates related to the Cluster's companies on the website and social media accounts/ pages

**IT Technicians:**

- The IT team will support all the companies in solving any IT or internet problem

**Nurses:**

- Nurses will take care of any cluster's employee with health issue

**HR Employees:**

- In charge of the recruiting process. They will conduct interviews and support the board members in recruiting people
- Support the cluster's companies in the recruitment, screening and hiring operations
- Support the companies in their HR operations

**Auditors:**

- Auditors will take care of all the auditing operations
- They will offer auditing services to the project tenants such as auditing, financial statements examination, taxation and more

**Consultants:**

- Consultants will support the Hub's companies in solving all business issues
- They will help them in optimizing their performance and increasing their profits

**Lawyers:**

- Lawyers will resolve all legal operations and issues when needed
- They will offer legal advisory services to the project's tenants
- They will support the project's tenants in solving legal disputes
- They will assist all companies in formulating appropriate employees' contracts

**Cleaners:**

- Cleaners will be in charge of all cleaning activities in order to maintain the required standards of cleanliness

**Maintenance Employees:**

- They will provide maintenance services to the project's tenants (companies, retail and etc.)
- The maintenance team will operate the project's power plant

**Security Guards:**

- The security team will secure premises and personnel by patrolling property, monitoring surveillance equipment, inspecting buildings, permitting entry and more

**Gardeners:**

- Gardeners responsibilities will include monitoring the health of all plants and greenspaces, watering and feeding plants, trimming trees and shrubs, fertilizing and mowing lawns, weeding gardens and keeping green spaces and walkways clear of debris and litter

## B. Processes/ C. Governance interactions

### Operating Processes & Decision Rights Matrix :

Legends : K = Know      I = Inform      S = Support      D = Do      A = Approve

Org. Member Task/ decision	Chief Executive Officer	Board of Directors	Administrative Employees	Supervisor	Digital Marketer	Sales	IT Team	Finance/ Auditors	HR	Lawyers	Consultant
Follow-up construction phase	D	D								S	
Companies selection process	A	A				D				S	
Companies registration	A	A	S			D, I	S	K		S	K
Recruiting cluster's employees	A	A	S						D		
Formulating employees contracts		A	S						D	S	
Set the rent & services fees	A	A	S		K	D, I	K	K			K
Solving legal operations & issues	A, K	A								D, I	

Figure 53. Operating Processes & Decision Rights (1)

Org. Member Task/ decision	Chief Executive Officer	Board of Directors	Administrative Employees	Supervisor	Digital Marketer	Sales	IT Team	Finance/ Auditors	HR Employees	Lawyers	Consultant
Planning marketing campaigns		A			D, I			A			
Executing marketing campaigns					D						
Managing social media channels					D						
Solving business issues	K										D, I
Supporting Companies in optimizing profits											D
Performing auditing operations								D			
Maintaining IT infrastructure							D				

Figure 54. Operating Processes & Decision Rights (2)



Org. Member Task/ decision	Chief Executive Officer	Board of Directors	Administrative Employees	Supervisor	Digital Marketer	Sales	IT Team	Auditors	HR Employees	Lawyers	Consultant
Supporting cluster's companies in HR operations									D		
Taking care of rooms reservations				D							

Figure 55. Operating Processes & Decision Rights (3)

### Example – Company Selection & Registration Processes

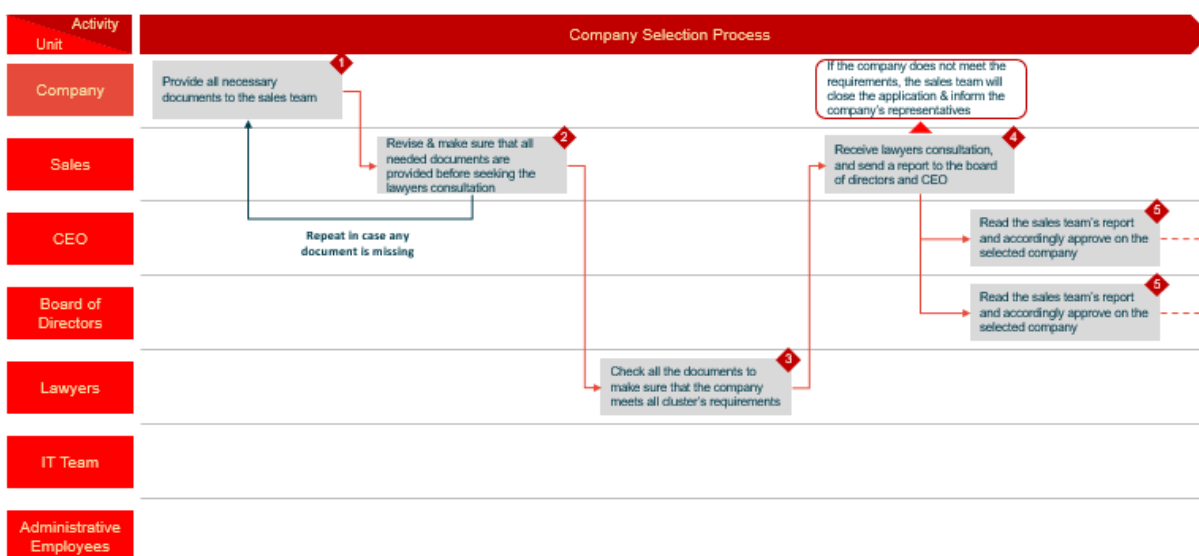


Figure 56. Company Selection Process

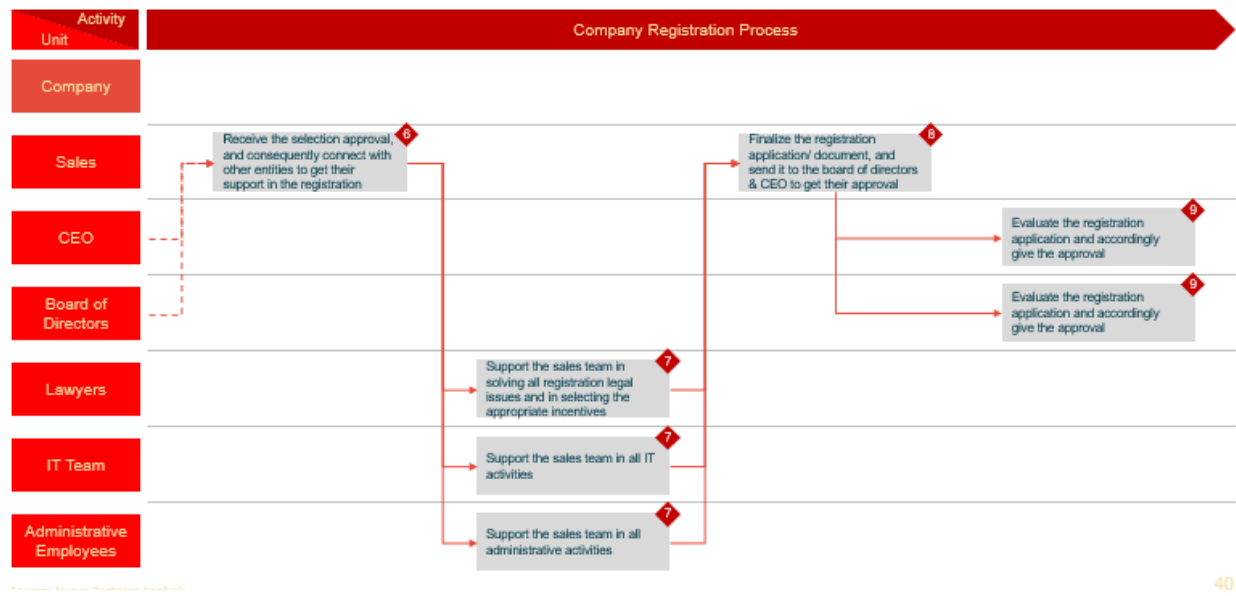


Figure 57. Company Registration Process

## D. People & Culture

Tech hub unique culture is emphasized by three main characteristics :

### Collaborative Environment :

- Open workspace and blend teams so no one is working in a silo
- Young talents working with tech veterans and learning from them
- 

### Feeling Part of a Community :

- Organizing happy hours and after work activities to stimulate interactions with colleagues that don't always work together
- Hosting fireside chats and "Standup Monday", where everyone shares information about projects they're working on and introduces new hires

### Empowerment :

- Allowing people to share their thoughts and ideas so that they can feel their opinions are heard and valued
- Encouraging intellectual curiosity among people

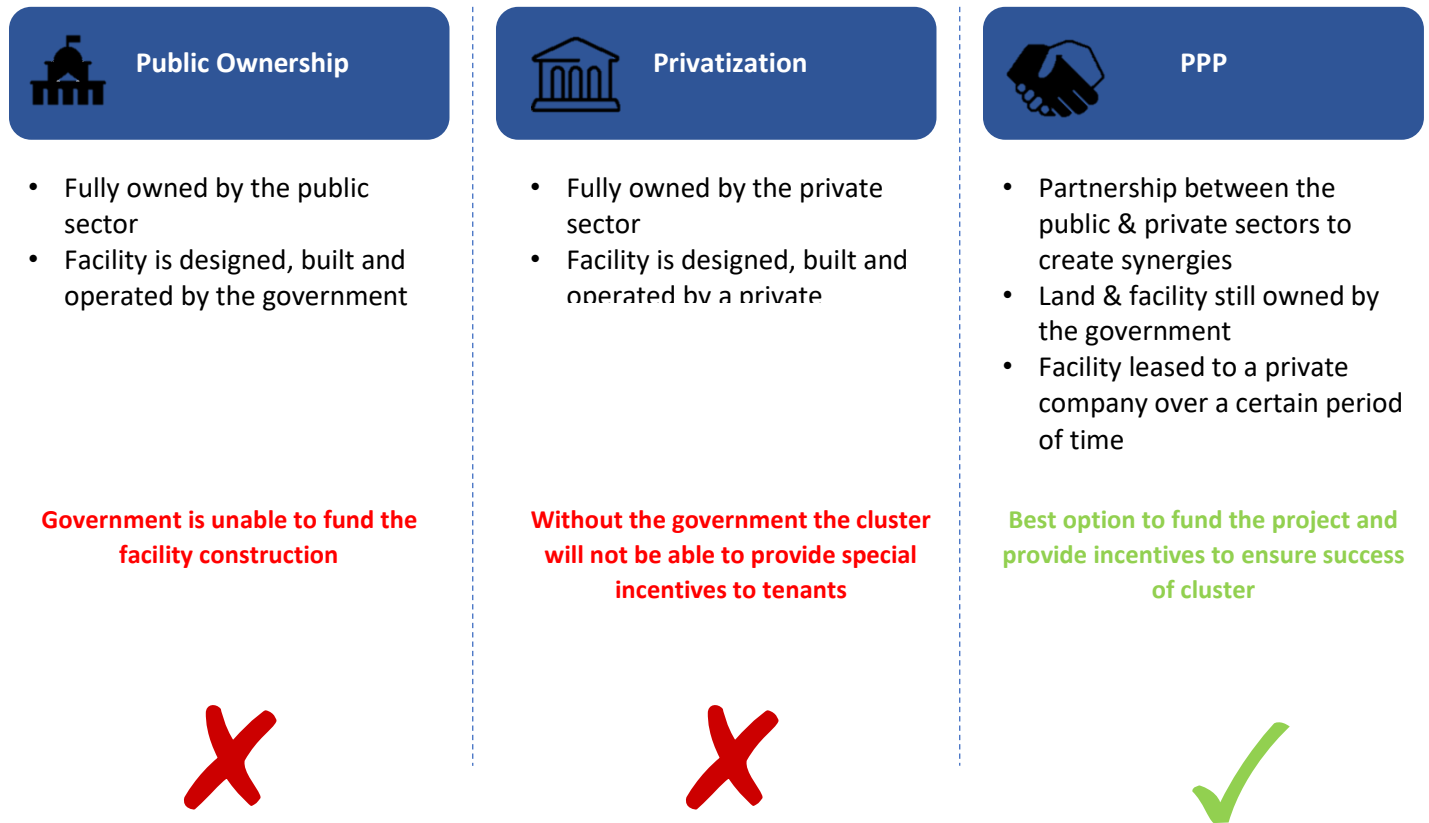
## 5.5- Legal and regulatory framework

The cluster's legal framework is defined in a three-step approach:

- A. Identify the optimal legal framework
- B. Determine the optimal legal structuring
- C. Determine high level key regulatory requirements

### A. Identify the optimal legal framework

The optimal legal framework is based on public-private-partnership



The BOT partnership strategy requirements are aligned with Lebanon PPP law 48. Therefore, a BOT partnership strategy will be implemented.

The BOT partnership strategy state the following :

- a. Project Developer (Private Sector):
  - Responsible of all the construction operations including licenses obtention
  - Responsible of buying all the furniture and equipment needed in this project
  - Responsible of operating and maintaining the project for 30 years, after this period the project will be transferred to the government

- Estimated total revenues are expected to reach around USD 2 Billion over 30 years
- Profits are expected to reach USD 835 Million over 30 years

b. Government (Public Sector):

- Offer the land in exchange of a rent that will vary as follow: 0% of land value for the first 3 years, 1% between years 4 and 6, 2% between years 7 and 9, 3% starting from year 10
- Facilitate the construction licenses processes
- Operate and maintain the project after 30 years
- The government rental income is expected to reach USD 562 Million over the first 30 years

**B. Determine the optimal legal structuring**

Lebanon PPP law 48 outlines 15 key provisions to be included in the PPP project agreement:

1. The parties' respective rights and obligations
2. The basis for financing the PPP Project
3. The duration of the partnership, which should not extend beyond 35 years
4. The respective revenues to be received by the project company from the public entity or by the public entity from the project company depending on the nature of the common project, and the corresponding means of payment
5. The fees and dues which the project company can collect on behalf of the public authority and for its account
6. Key performance indicators
7. The reports to be submitted by the project company
8. The allocation of project risks and mitigation measures
9. The rules governing the potential amendment to the basic terms of the contract
10. The guarantees, undertakings, and commitments which may be provided for the fulfillment of the PPP Project
11. The public assets put at the disposal of the project company
12. The transfer procedures, whenever the nature of the PPP project calls for it
13. The procedures guarantying the continuity of the PPP project and its related operations upon termination or expiry of the Project Agreement or breach of its contractual obligations
14. The procedures and remedies in case of breach as well as detailed enforcement procedures in respect to these remedies
15. The dispute settlement mechanism, including mediation as well as domestic and international arbitration.

**C. Determine high level key regulatory requirements**

A non-exhaustive list of 19 regulatory requirements within 9 regulatory categories should be implemented to incentivize and attract foreign and local investors.

a. Government procedures

1. All the startups located in the techpark All the startups located in the techpark should be exempted from corporate taxes for a 10-year period
2. Lower fees associated with company formation, branch registration and licensing for companies located in techpark

3. 50% of the social security fees paid by startups should be covered by the government for the first 5 years
  4. Ease of company closure
- b. Customs procedures
5. Replace import and export paperwork with easy online operations
  6. Make agreements with regional and international countries to provide the techpark's tenants easy and efficient access to global markets
- c. Employment Labor
7. Online registration for foreign employees
  8. Propose laws that facilitate obtaining work permits
  9. Remove laws that forbid Non-Lebanese nationals from applying to certain types of jobs
- d. Construction works
10. Propose laws that facilitate obtaining the construction permit for foreign investors/ companies
  11. Foreign investors should be granted an occupancy/ residency permit after receiving the construction permit from local authorities
- e. Property and real estate
12. Develop policies that facilitate property registration, transfer & ownership
  13. Propose laws that facilitate and protect the rights of property ownership for foreign investors/ companies
- f. Environment and social standards
14. The tech-park's management should Adopt sustainable processes in the architectural & construction components such as green spaces, LEED certificate, and energy efficiency solutions
- g. Dispute resolution
15. Provide a clear dispute resolution framework for adjudicative (arbitrator determines the outcome) and consensual (parties attempt to reach an agreement) processes
  16. Protect multinational firms' intellectual property through providing an IP dispute scheme with global best practices
- h. Health, safety and security
17. Set health, safety and security guidelines and rules for all R&D and non-R&D activities

18. Provide training for employees to make sure that they know the health & safety rules and how to apply them, how to adequately react to emergency situations, and how to report any health and safety related issue

i. Services of public utilities

19. The tech-park should provide to its tenants all kind of public utilities services such as back up UPS & secondary power generator, sanitary sewer network, irrigation supply system, and fire suppression & leakage detection system