



Policy Options for Connecting and Enabling the Next Billion

1. How would you define, or how do you understand, the theme “Connecting and Enabling the Next Billion”?

In addition to global connectivity through satellites and marine cables, The Ministry of Telecommunications (MoT) announced its “Lebanon 2020 Digital Telecom vision”, an action plan that will ensure connectivity on the whole Lebanese territory. This five year plan will take the telecom sector to the next level of development, introducing the “Internet of things” concept.

With this Lebanon 2020 strategy, Businesses related to Knowledge Economy are booming. It is expected that this revolutionary plan in Lebanese connectivity creates between 2600 and 3900 job offers yearly. This National strategy will enhance:

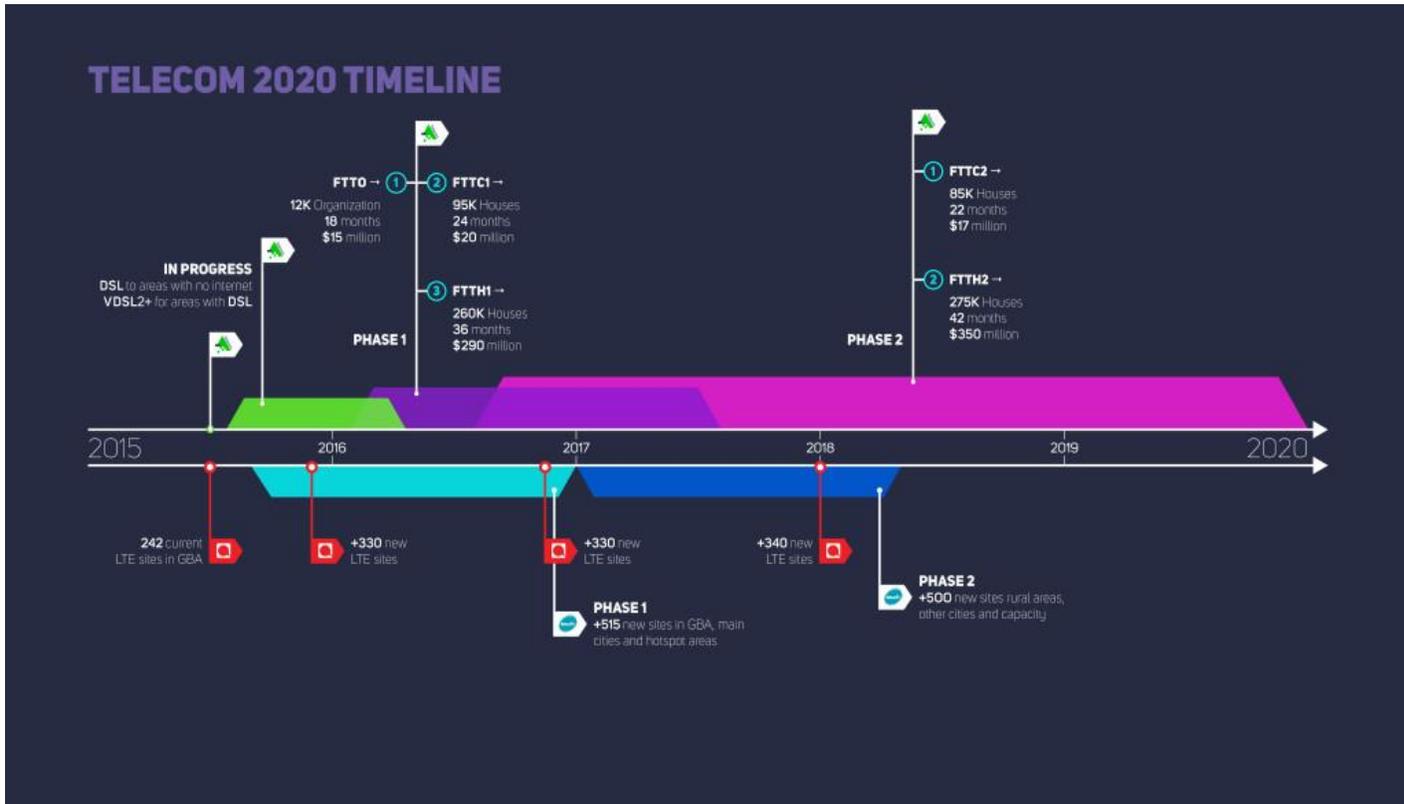
- a- Connected communities: providing Lebanese people with access to information technology and related services, providing local access to the Internet and opening doors to job opportunities.
- b- Training and Education: This strategy will help training future Business, Government, and Technology leaders by promoting integration of Internet first in schools and Universities which provides the basic foundation to move from traditional teaching to new methods by using ICT tools.
- c- Job creation and Start-ups: This strategy encourages small IT business development, start-ups and creates new jobs helping skilled workers to stay in Lebanon.
- d- ICT applications: This strategy will improve e-government services as Lebanon is preparing to launch electronic services in government departments and enhancing the currently offered ones.
- e- Contribution to economic growth: it is expected that this strategy leads to substantial benefits to the economy in general and to various sectors such as health, Research & Development, Farming, ...

To conclude, the Ministry of Telecommunications (MoT) believes that its plan, namely the Broadband technology will lead to sustainable socioeconomic development, will transform the lives of the Lebanese population especially the young, women and marginalized communities and help achieving the Sustainable Development Goals (SDGs) adopted by the UN under “Development Agenda 2030”.

2. The first phase of Connecting and Enabling the Next Billion identified a set of policy options aimed at the creation of enabling environments, including deploying infrastructure, increasing usability, enabling users, and ensuring affordability. What are the factors to consider when

adopting these policy options at local levels (e.g. the state of a country's market development, the available infrastructure, level of capacity-building, etc.).

When adopting this policy, MoT took into consideration the current situation of the Lebanese Market and the emergence of new generations of Mobile networks as well as the increasing demand on Internet bandwidth via fixed and Mobile.



This plan was prepared by the MoT and the fixed network operator, OGERO Telecom, in response to the huge demand on Big Data knowing that this project will attract foreign investments into Lebanon while contributing to economic development and providing job opportunities.

The action plan functions on two levels:

- The 1st involves FTTX. The fiber optic network will link all end-users by 2020 and replace the existing copper. Noting that a fiber optic network already exists but for the time being it only connects centers together, whereby the new plan will assure among others Fiber To The Home (FTTH), Fiber To The Office (FTTO),...
- During the development phase, the country will keep on using the current copper network for DSL but the fiber optic network will be ready successively.

- The 2nd level looks into improving the mobile telephony by optimizing the 4G network and covering most of the country to follow up with the rest of the world by 2020 with the 5G.

3. Are you aware of any specificities around connectivity at a local or regional level? (do you know of factors that impact connectivity in, for instance, rural areas but less so at an urban level? Or factors that affect connectivity at regional or larger scale, but not as noticeably at local or smaller scale?)

Internet and ICT infrastructure in the Arab Region and particularly in Lebanon witnessed a rapid growth due to governments' investments as well as market competitiveness.

MoT set this ambitious plan in response to huge demand and knowing that this project and investment will attract foreign companies into Lebanon. It is worth mentioning that fiber optic network already exists but the "Lebanon 2020" plan will provide among others Fiber To The Home (FTTH) and Fiber to The Office (FTTO).

At the same time, The Lebanese Government took some measures to reduce tariffs of communication on local, International and mobile calls along with sharp decrease on Internet services fees, which resulted in an increase in Internet penetration from 70% in 2013 to 86% in 2015.

With regard to Building trust and security in ICT, The Lebanese Government is developing legal, regulatory and institutional frameworks, in addition to the most advanced techniques to enhance security in the cyberspace. Much effort is taken to draft and adopt laws related to cybercrime and e-transactions.

4. Data shows that the growth of Internet adoption is slowing down in some areas, especially as broadband services extend to more remote, less densely populated areas (facing challenges beyond affordability and availability). What are some of the barriers or limitations preventing people who do have Internet access from being enabled or empowered through such connectivity?

The main barriers are lack of awareness and ICT illiteracy. ICT literacy and raising awareness about the benefits of ICT are the main key.

5. What does meaningful access mean?

The "meaningful access" means providing the right product and services to the right user. It is not only to provide access as in last mile connectivity. Sometimes the result is that even where the marginalized people in rural areas are provided access to digital technology, they receive superficially "localized" versions of products and services intended for the others. Whereas inappropriate access could actually harm them. In effect, extending un-meaningful access to digital technologies to the rural sector of emerging markets could actually widen the digital divide.

6. How can connectivity contribute to reaching the new SDGs?

The Internet provides the vital platform for the growth of ICT and for the emerging knowledge economy in which information is crucial to create new and improved products and services that constitutes a main element for the generation of wealth.

Digital economy plays a key role in driving economic growth and increasing GDP per capita, It is the main factor to increase social growth, create job opportunities and support intellectual capital and thus, ensuring sustainable development.

8/9. Do you know of ways in which ICT could help reach the SDGs? examples of success stories that can illustrate how Internet access can help to address real-world problems (in either developed or developing countries)? For example, do you have stories or experiences to share regarding some or all of the following SDG-related questions?

• How can connecting and enabling users help to reduce poverty in its various forms? (SDG 1)

Connecting and Enabling users can help reducing poverty, providing necessary requirements to help developing ICT tools leading to positive impacts that technology can have on society. Examples include m-commerce and mobile financial services to increase social and financial inclusion.

ICT can also be a pillar to increase productivity and competitiveness among small and medium-sized businesses. It increases literacy and engagement among people living in poverty.

• How can connecting and enabling users help to end hunger, achieve food security and support improved nutrition? (SDG 2)

From a broad perspective, GDP is highly positively impacted by broadband penetration. Needless to mention the role that ICT can play in humanitarian circumstances, improving people's ability to access basic goods in times of crisis.

Besides, ICT allows people to quickly and easily make donations to their communities.

• How can connecting and enabling users help to promote sustainable agriculture? (SDG 2)

ICT is seen as an emerging field focusing on the enhancement of agricultural and rural development through improved information and communication processes.

Internet can be used as a coordination tool to encourage young farmers to build and expand their farming experience.

ICT access can improve the sustainability of agriculture by empowering farmers and fishermen in rural communities to run their businesses efficiently and reach new markets which can be a trigger for increasing productivity.

• How can connecting and enabling users help to ensure healthy lives and to promote well-being at all ages? (SDG 3)

Telemedicine is the basic example on how Connectivity can improve health and well-being. Linking big hospitals in the capital with the hospitals in rural areas or even abroad enables real time video consultation between doctors and enables the sharing of data and diagnostics from far.

By 2030, health systems will be deeply interconnected through the use of ICT tools. Telemedicine software, unified databases and smartphones can enhance communication links in the health sector. They will also improve well-being and reduce health costs.

ICT can integrate different parts of health systems, enabling interconnectivity, improved quality, accountability, cost-effectiveness, patient empowerment and fight diseases.

- **How can connecting and enabling users help to ensure inclusive and equitable, quality education? (SDG 4)**

Mobility, broadband and the cloud are key technologies that place connectivity at the forefront of change to enable users and to transform education and deliver quality schooling in the digital age. The Lebanese Government embraces the trend in portable computing through digital devices in classrooms. The plan is to configure schools for wireless internet access that will further enhance the benefits of laptops.

ICT helps innovating new pedagogical practices and teacher professional development opportunities beyond the limits of schools

As mobile broadband becomes even more ubiquitous, reaching out to the most remote regions of the world, it offers unparalleled opportunities to transform education. Using ICT to connect classrooms and support the quality of education improves access to learning and teaching resources for students and teachers around the world – even those in the most remote villages.

- **How can connecting and enabling users help to promote lifelong learning opportunities? (SDG 4)**

The ICT solutions can be using in learning as they remove traditional barriers of time and space even for the most rural communities. Further, mobile technology enables real-time access to data making content more relevant and responsive to the needs of learners. The major requirement in this case is public awareness.

- **How can connecting and enabling users help to achieve gender equality? (SDG 5)**

Lebanese Government already engaged in activities to spark the interest of both male and female and to offer equal access to study ICT related topics.

The World Bank suggests that investing in women and girls can have a 10-times multiplier effect on the community in developing countries. Greater access to technology has been proven to support women.

Many associations in Lebanon were established and dedicated to provide training and to inspire more women to be willing and able to use the new technologies.

- **How can connecting and enabling users help to empower women and girls? (SDG 5)**

If they are to reach their target, technology companies, including OGERO Telecom will have to recruit more women at all levels of the organization. Companies will have to work even harder to attract more women to the industry.

Ericsson, for example, set a challenging target of a 30 % female global workforce by 2020.

- **How can connecting and enabling users help to ensure the availability and sustainable management of water and sanitation? (SDG 6)**

ICT can also help overcome the challenge of clean water. During the workshop “Information technologies for a smarter water future” there was a focus on the potential of harnessing information technologies for more sustainable water and sanitation solutions, for example, by reducing water use in food production and other commodities.

On the ground, the rise of smartphones and increased internet access will lead to an explosion of data sharing both inside and outside existing governance structures, which will empower many, from farmers to local utility workers and from local government staff to citizens and civil society groups. Innovative information technologies will also lead to advanced system-wide solutions and smart water extraction, treatment and delivery infrastructure.

Smart solutions can contribute significantly to a sustainable future by reducing water and energy consumption in the production of food and other commodities. Field trials by Technology companies for connected water solutions will enable protecting water and remotely monitoring its quality which allow early detection of water contamination.

- **How can connecting and enabling users help to ensure access to affordable, reliable, sustainable and modern energy? (SDG 7)**

According to the Ericsson Energy and Carbon Report, The ICT sector is responsible for about 1.3 percent of total global greenhouse gas (GHG) emissions. It also includes an update of 2020 forecast for the sector’s GHG emissions. Even with the expected dramatic growth in mobile subscriptions, the total ICT impact is expected to account for no more than 2 percent of total GHG emissions in 2020. This is largely due to advances in technology, and industry-wide efforts to reduce energy consumption.

Latest researches show a huge potential for the ICT sector to provide solutions that reduce global GHG emissions in other sectors, it shows that the total GHG emission reduction potential, thanks to ICT solutions in the areas of smart grids, transportation, buildings, work, travel, services, agriculture and land use, is about 10 Gigatonnes of CO₂e in 2030, corresponding to 15.7 percent of global emissions. As we move into the IoT arena, this could be an incredibly powerful story to tell.

- **How can connecting and enabling users help to promote sustained, inclusive and sustainable economic growth? (SDG 8)**

ICT is an ever-renewing technology that has the potential to increase efficiency, facilitate knowledge sharing and enhance innovation.

ICT provides economic opportunities to both urban and rural populations. One common contribution is that it increases productivity and makes the market work more efficiently, although the magnitude of the impact on economic growth is likely to be different. As a result, ICT is becoming the largest distribution platform of providing public and private services to millions of people in rural and poor areas.

Connectivity plays an important role as productivity enhancer, job creator and growth generator. In fact ICT infrastructure is the key for development overall, with telecommunications, education, health, transport and energy ministries all seeking to increase efficiency and productivity through smarter access to and use of ICT. The m-commerce platforms are seen as a valuable tool for providing financial services for the poor.

The World Bank has recorded a massive 20 percent drop in the numbers of unbanked consumers, with the figure of 2.5 billion unbanked being reduced by around 700 million as adults worldwide joined the formal banking system and became account holders between 2011 and 2014. Technology, and in particular mobile money, is seen as playing a pivotal role in expanding access to banking services.

- **How can connecting and enabling users help to promote full and productive employment? (SDG 8)**

Nowadays, Internet is the main tool to search for employment and to be in touch with the major job offers. Continuous training and online courses can lead to more productive employment.

- **How can connecting and enabling users help to ensure decent work? (SDG 8)**

On the other hand, Internet promotes awareness enabling to eliminate forced labour and to protect labour rights. Connectivity is also used to safeguard from child labour.

- **How can connecting and enabling users help to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation? (SDG 9)**

ICT infrastructure is increasingly recognized as a key infrastructure for development and progress. From bringing the most remote villages into the connected society, to solving pressing challenges around urbanization, ICT can have an impact on every one of the Sustainable Development Goals, and will provide essential infrastructure to help achieve them.

From OGERO side, the fiber optic network which is being installed can boost industries and foster innovation which can significantly raise gross domestic product.

Cooperation is triggered with the Order of Engineers to achieve sustainable and resilient indoor networks.

We are also participating in ITU standardization around how to measure the social and environmental impacts of cities from a life-cycle perspective

- **How can connecting and enabling users help to reduce inequality within and among countries? (SDG 10)**

The Telecom 2020 plan will ensure equal opportunities and promote social and economic inclusion of all Lebanon's residents irrespective of age, gender, origin, religion or economic status.

OGERO tries to represent Lebanon in all ICT decision making and global forums in order to make Lebanon's voice heard knowing that ICT is an essential part of every aspect of our lives. It also helps advance equality, democracy, governance and freedom of expression..

In connecting the unconnected, Lebanese will benefit from huge opportunities for business and society using the technology.

And by having affordable and fully accessible, the internet spreads chances to all, allowing everyone to benefit from the digital age on more equal terms, which leads to positive impacts for business, people and society.

- **How can connecting and enabling users help to make cities and human settlements inclusive, safe, resilient and sustainable? (SDG 11)**

Connectivity can reduce administration costs and improve access to key areas such as health care, education and banking, and provide a platform for inclusion.

Broadband and cloud solutions provide opportunities to construct smarter buildings and support delivery of e-government services.

Real-time roads monitoring can provide municipalities and traffic controllers with appropriate and up-to-date intelligence enabling them to make better-informed decisions on the management of traffic, city services such as roads and electricity.

- **How can connecting and enabling users help to ensure sustainable consumption and production patterns? (SDG 12)**

Connectivity can help decreasing energy use as well as material consumption. It also supports the reuse, sharing and remanufacturing of products and goods. In terms of cloud services, studies show that moving to the cloud could dramatically affect resource use, both in material and energy.

• How can connecting and enabling users help to combat climate change and its impacts?(SDG 13)

Connectivity and enabling users can improve education, awareness-raising and human and institutional capacity in climate change, impact reduction and early warning. It plays a role in consumer behavior with regard to environment matters.

The ICT sector is responsible for about 1.3 percent of total global greenhouse gas (GHG) emissions, according to the Ericsson Energy and Carbon Report (2014), which looks at the ICT sector's own environmental impact in terms of electricity use and GHG emissions. But even with the expected dramatic growth in mobile subscriptions, the total ICT impact is expected to account for no more than 2 percent of total GHG emissions in 2020. This is largely due to advances in technology, and industry-wide efforts to reduce energy consumption. However, in absolute terms the emission levels from ICT are still considerable and must be addressed.

OGERO Telecom took actions to reduce energy consumption in its locations including adopting a number of energy cutting measures, Power-Saving features Network and Site Energy Optimization.

Noting that ICT solutions help other sectors of society for example substituting travel with collaborative tools or substituting the need to offering physical services by delivering e-products and services.

• How can connecting and enabling users help to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss? (SDG 15)

Connectivity can contribute to the monitoring of water flows, rain, snow, winds and provide more effective early warning systems to protect species and fragile land areas.

Internet can support by helping to raise people's awareness of their environmental influence and, in turn, help them to make informed choices and adapt their behavior, for example about not buying furniture from protected forests.

Virtual communities, gamification, e-petitioning and e-panels provide potential for enhancing and complementing existing community participation processes as well as developing new ways of reaching previously hard-to-reach groups.

• How can connecting and enabling users help to promote peaceful and inclusive societies for sustainable development? (SDG 16)

Connectivity and enabling users ensure that citizens can have access to information awareness of their rights which will end all forms of abuse and violence.

Citizens will be able to participate in society and express their opinion through media, the internet and other channels, keeping them engaged with institutions. Connectivity brings increasing transparency to society. Many fundamental human rights such as the right to

health, education, freedom of assembly and freedom of expression are enabled through ICT.

- **How can connecting and enabling users help to provide access to justice for all? (SDG 16)**

Social media through connectivity can create a pressure to advocate justice. Awareness of ones rights and responsibilities can lead to preventing complicated situations. Access to laws and regulations is being facilitated.

- **How can connecting and enabling users help to strengthen the means of implementation? How can connecting and enabling users help to revitalize the global partnership for sustainable development? (SDG 17)**

OGERO plays an active role in advocating for ICT's transformational role in sustainable development. This includes connecting the unconnected.

On the National level, OGERO is supporting all initiatives from other sectors whether education, health, banking, tourism. to achieve the sustainable development goals.

OGERO also supports global initiatives aiming to achieve these goals such as UN initiatives, GSMA initiatives, ITU initiatives, Internet Governance Forums (Whether regional on Arab level, which we hosted for 2 consecutive years or global by participating in the MAG).