

Digital Economy....How Are Developing Countries Performing?

The Case of Egypt

by Nagwa ElShenawi (PhD) MCIT, Egypt

Produced for [DIODE Network](#), 2017

Introduction

According to the OECD some of the most important trends in the digital economy include mobility, cloud computing, social networking, sensor-nets and big data analytics that collectively are bridging the world with the future of “smart everything”: grids, homes, business processes, energy, healthcare, transport and government), as well as empowering businesses, consumers and society at large.

These new and future applications are dependent on the widespread availability of fixed and wireless broadband networks (infrastructure) on the supply side, and the sophistication and uptake of individuals on the demand side.

The sustainability of the digital economy is increasingly relying on its adaptation to the new needs and appropriation to different economies and societies and hence comes the importance of unleashing the innovation capabilities to meet such needs. Furthermore, the proliferation and success of a digital economy can help empower societies by its solutions and application and positively effects on the growth levels and the well-being of a country.

Therefore, four-critical key areas can be tracked to assess how a digital economy is performing:

- A. Investing in smart **infrastructure**.
- B. Empowering **society**.
- C. Unleashing **innovation**.
- D. Delivering **growth** and **jobs**.

The digital economy can be harnessed for inclusive and sustainable growth. The OECD highlights for *developing countries* that: “the digital technologies can make life easier for citizens and consumers in these countries, raise the productivity of workers and firms, and help governments extend key services to those who need them most.”. There is the recommendation that these benefits do not just happen randomly, and hence it suggests that governments must engage in strategic planning to better exploit the development impact of digitalization and ensure that its benefits are evenly distributed using the experience of leading economies.

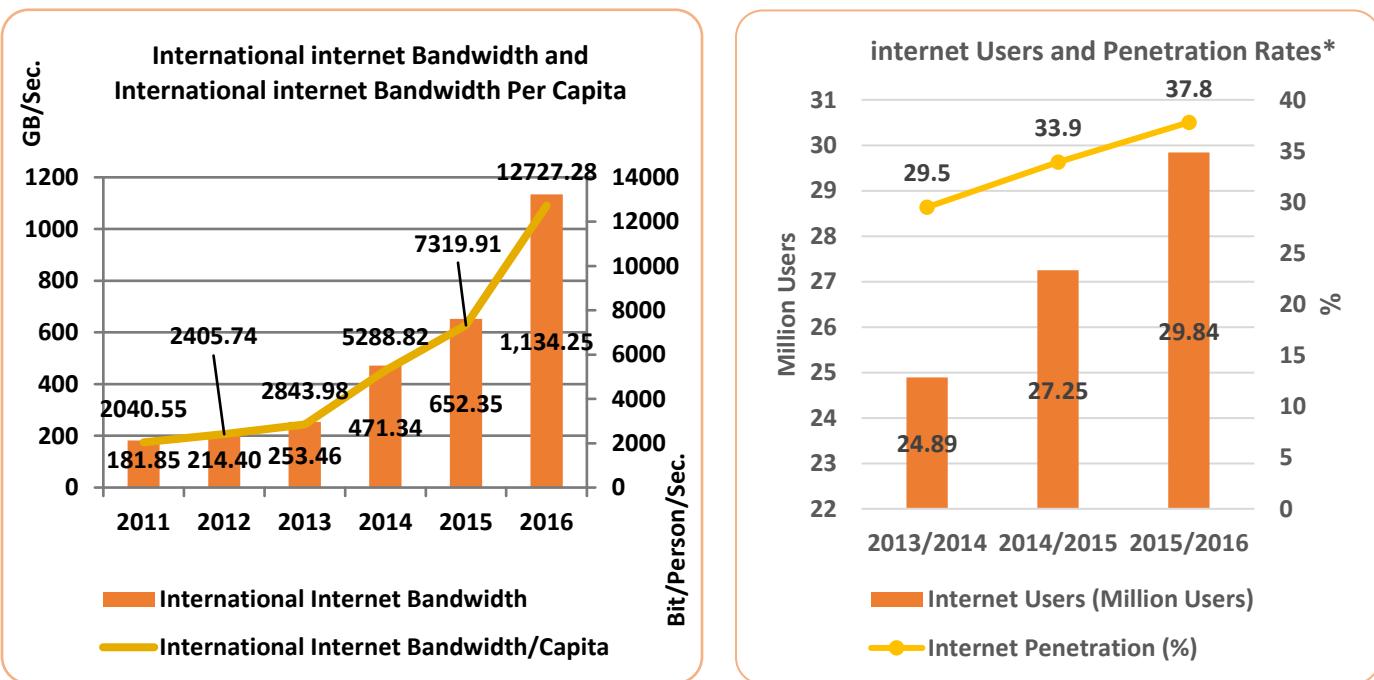
The OECD highlighted that although these economies are characterized by high added value, faced with numerous obstacles, many developing countries cannot adequately respond to the demands of the digital economy. Inadequate access to the latest technology, sophisticated telecommunications infrastructure, low computer literacy as well as numerous cultural and socio-economic factors are just some of the challenges that developing countries have to face. On the other hand, with a clear policy and specific plans and objectives, it is possible to "skip" a few steps and effectively respond to the demands of the global market

The Case of Egypt

In the case of Egypt as a developing country, there have been several efforts undertaken towards the transformation of the country to a digital economy. These efforts include leveraging the country's infrastructure and the uptake of ICTs and encouraging innovation to start-ups in the IT sector. The following four sections explain some substances of the efforts:

A) Investing in Smart Infrastructure

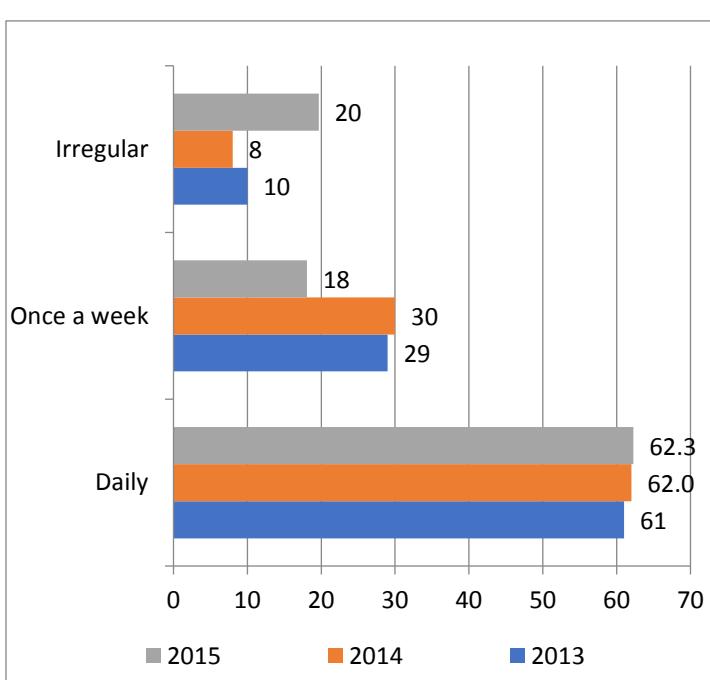
The National Telecom Regulatory Authority (NTRA) approved, in 2016, the regulatory framework of the Egyptian telecommunications market, including **fourth generation (4G) services**, allowing mobile operators to offer the same services to end users. The NTRA recently granted 4G mobile services licenses to the four main telecom operators. In 2017, Telecom Egypt became an integrated telecommunications operator by providing mobile services adding up a fourth competing mobile operator to the market. This step will shift the country to digital infrastructure, which is the foundation of the digital economy; and consists as the main enabler for bridging the digital divide and greatly empowers the ICT industry in Egypt.



- International internet Bandwidth represents the main gate for the digital economy in Egypt; as it represent the fundamental supply element for the internet. It increased tremendously during the period of five years from 2,040.50 bit/s in 2011 to 12,727.28 bit/s in 2016 by more than 500%. Concerning the share of individual from the international internet bandwidth, it reached 1,134.25 Bit/s in 2016.
- The degree of ICT infrastructure development is directly reflected in the number of internet users in any economy. In Egypt, the percentage of individuals using the internet increased from 29.5% in 2013/2014 to 37.8% 2015/2016.

- The ownership of the mobile phone is another important emerging indicator reflecting the opportunities generated for the youth to excel in ICT usage. The percentage of individuals owning mobile phones as a % of total individuals reached 84.8% in 2015.
- According to National Telecom Regulator, the national broadband plan is committed to increasing broadband internet penetration in Egypt and endorsing the development of a digital society. The Plan aims to promote the use of ICTs across government sectors, thus improving quality of life for citizens and reducing the digital divide between urban and rural communities. It includes projects aiming to provide high speed broadband service to a number of institutions and bodies including Education, Health, Youth, Scientific Research, Agriculture, Manpower and Civil Aviation. These projects cover all Egyptian governorates clustered in five geographic regions.
- Egypt strongly supports the expansion of giant data centers and cloud computing, aspiring to make the country a global hub. Several license agreements have been signed this year which are intended to pump-prime new investments in the Egyptian market and provide new job opportunities for young people in the field of building and managing data and information centers and paving the way to the proliferation of cloud computing. As well, a decree to establish the Executive Bureau and the Technical Committee of the Egyptian Supreme Cybersecurity Council (ESCC) has been issued. Its mandate is to formulate a national cybersecurity strategy, and to oversee the implementation of related initiatives and programs.

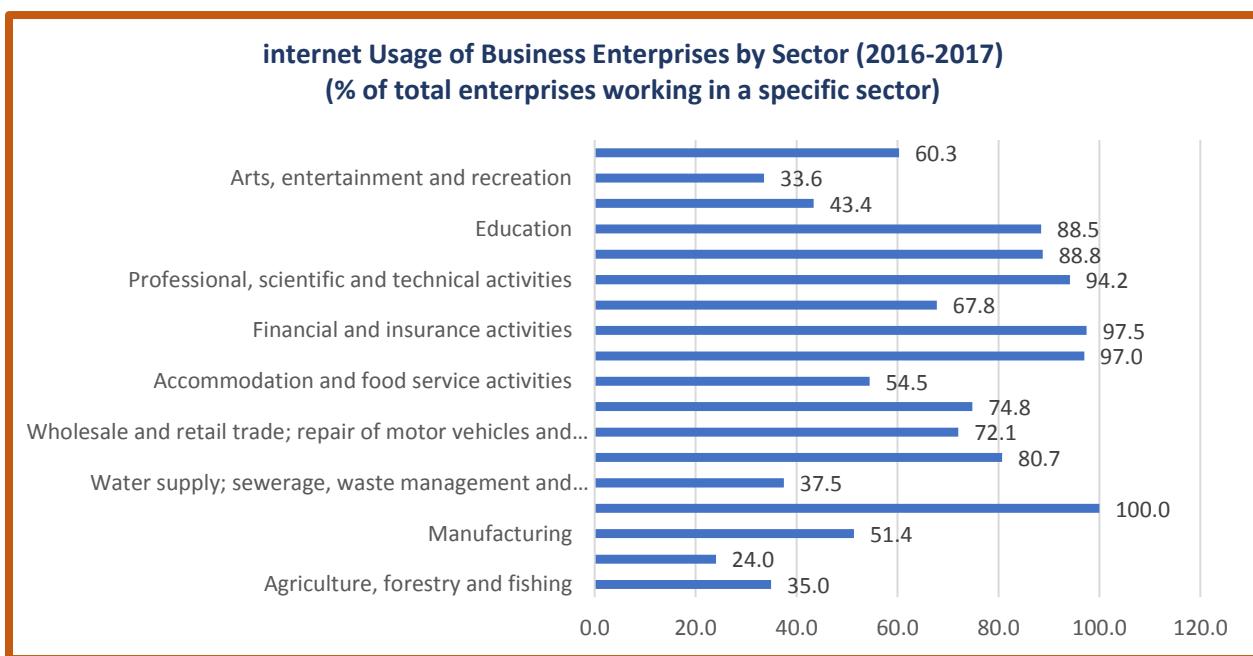
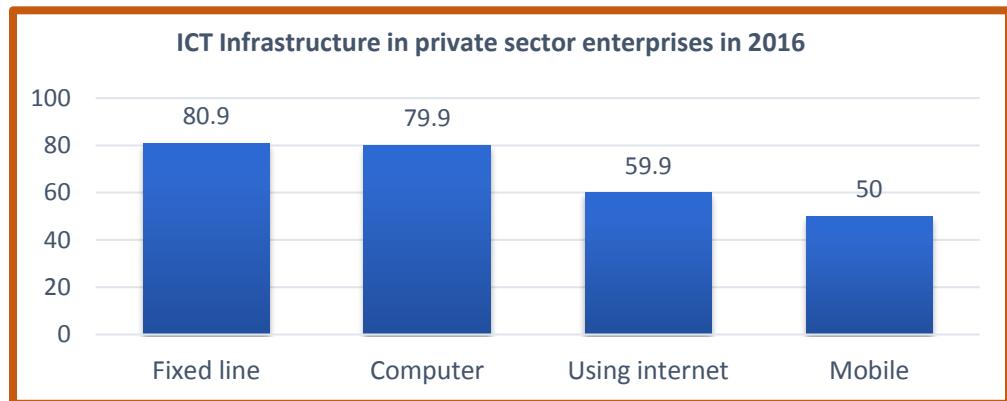
Figure: Internet usage frequency (% of total individual using internet)



Indicator	Value (year)
Expenditure on education, % GDP	3.8 (2012)
Tertiary enrolment, % gross	30.3 (2013)
Graduates in science & engineering %	11.8 (2013)
Researchers, FTE/mn pop	681.6 (2014)
Gross expenditure on R&D, % GDP	0.7 (2014)

- The effective use of digital technologies and services is related to the degree of individuals' skills to participate in the digital economy, as well as to the Government investment on education and R&D. Globally, Egypt is better ranked in terms of the gross expenditure on R&D than the expenditure on education in general. Reaching 0.7% of the GDP in 2014 (ranked 51st out of 107 countries) for the former and 3.8% for the latter in 2012 (ranked 85th out of 107

countries). This explains why the number of full time equivalent researchers reached 681.6 per million in 2014 in Egypt is better ranked (54th out 107 countries) than the level of the tertiary enrollment in Egypt reaching 30.3% in 2013 (ranked 77th out of 107 countries).



- The effective use of digital technologies and services is related to the level of engagement of private enterprises in the digital economy.
- In 2016, fixed line is still the main ICT tool used by the private sector (80.9% out of total enterprises) followed by the computer (79.9% out of total enterprises). As regards economic sectors, the electricity, gas and steam sectors, financial sector and the communications sector are the three top sectors using ICT in Egypt in 2016/2017.

B) Empowering Society

MCIT is about to announce a national strategy for promoting e-commerce in Egypt. The significance of developing an e-commerce strategy in Egypt lies in the expected economic and social return resulting from promoting this kind of commerce. E-Commerce contributes to increasing internal trade in Egypt and enhances the country's exports. It also creates jobs for youth and promotes their creativity and entrepreneurship skills. The e-commerce strategy will encourage small and medium-sized enterprises (SMEs) to work in the field of e-commerce and contributes, partially, in solving some of the lingering problems from which Egypt suffers, such as traffic congestion and pollution where consumers would turn to online shopping, thereby reducing traffic flow.

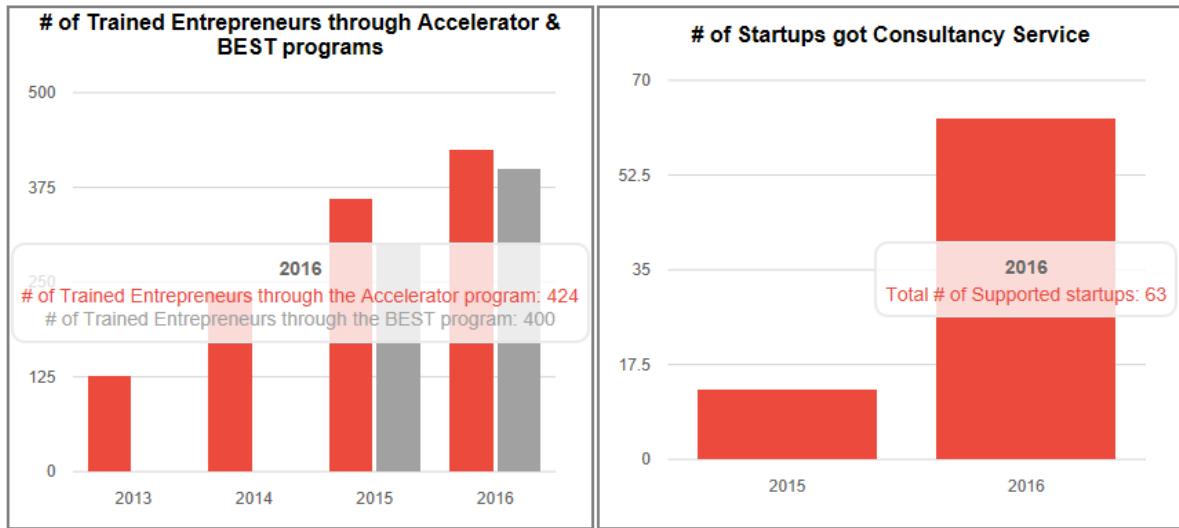
Furthermore, Egypt seeks to connect and empower the community through several initiatives / projects. As an example of community connection initiative, the government bolsters a healthcare system that uses ICTs; it realizes the important role that information and communication technologies (ICT) play in helping mitigate existing health care inequities. The Ministry of Communications is cooperating with the Ministry of Health to build capacities for both medical and administrative staff, creating developed networks to improve communication and data collection and transfer, and automating procedures. Another example was the establishment of e-government portals, which seek through automated services to provide key activities, and advantages to citizens. This helps to connect entities with the community and lets them assess services provided.

Egypt caters for a robust Arabic digital content industry realizing its significance in developing the country's economy and the importance of preserving Arabic identity and heritage. It therefore ensures every segment of the society has easy access to digital information in order to build an information society by means of digitizing and marketing Arabic content for its promotion.

C) Innovation and Entrepreneurship Support

The government sponsors and empowers society members, particularly youth, and equips them with necessary skills and tools in order to move toward a knowledge-based society. It provides world-class professional human capacity building programs, hands-on training and an exposure to the latest technology trends for university students and graduates, academia and professionals. It helps youth innovators in transforming their ideas into successful businesses through various projects and programs offered by different institutes in its Technology Parks. It also helps marginalized and remote communities, develops people's abilities to communicate and connect with their environment, and endorses online safety.

Figure: Entrepreneurship & Business Support

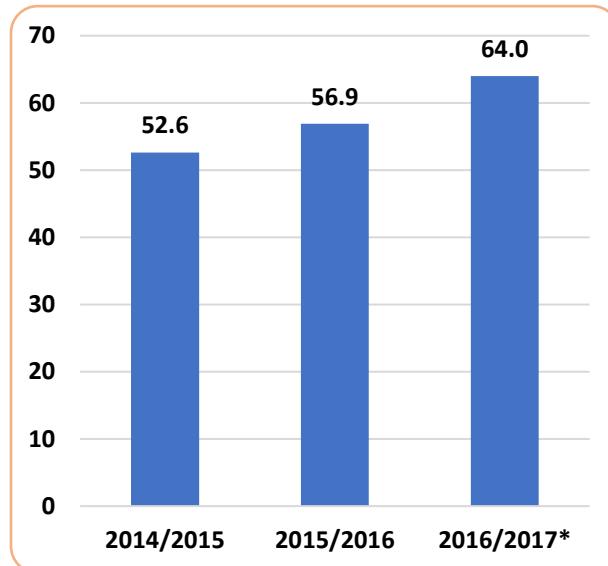


- Innovation is acknowledged as an important source of competitiveness for businesses. It can do so in many ways: reducing production costs, enhancing existing products and leading to the creation of new ones, or by presenting and selling products more effectively.
- Thus, building a strong digital economy relies on boosting innovation and encouraging its spread within the society.
- Innovation pertains to the level of investment in ICT deployed in a given country. In Egypt, the number of newly established companies in the ICT sector reached more than one thousand companies in 2016.

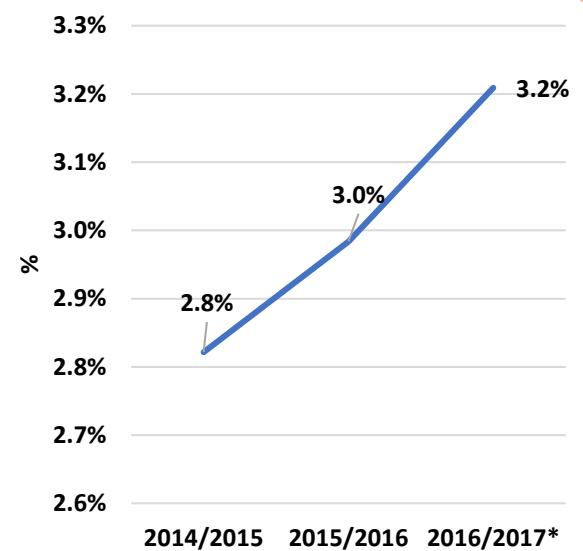
D) Delivering Growth and Jobs

There has been an effort over the last few years to sustain a favorable environment for ICT companies to compete and to add an increasingly growing value to the economy. In 2016/2017 the Egyptian ICT sector has contributed 3.2% of GDP, and contributed 0.37 percentage points to Egyptian GDP growth in 2016/2017. The sector has been providing between 90 to 95 thousand jobs in the outsourcing industry segment alone. Outsourcing industry is also estimated to have generated around USD 1.7 billion of exports in 2016 and is expected to reach USD 1.87 billion in 2017. The ICT sector witnessed a significant flow of targeted investments, whether domestic or foreign, with the share of the telecommunications sector alone accounting for LE 20 billion and EGP 7.9 billion in the IT sector, with a total growth of about 16%. As well, investments began to flow in the electronic design sector to take advantage of the potential of the promising new sector. These flows are due to policies and planning aimed at improving the efficiency of the telecommunications infrastructure, enhancing the export sector's ability to export and creating a competitive environment that encourages it to work and innovate. This will ultimately contribute to improving the productivity of the sector and contributing to the local economy with added value and job creation and positive savings. The flow of information and the reduction of transaction costs will contribute to transforming society towards the digital economy.

ICT value added at constant prices \$bn



Contribution of ICT to GDP %



Conclusion

Egypt has made great efforts in transforming its society into a digital economy in terms of continuous improvement in infrastructure and encouraging the spread of fixed and mobile services and high-speed internet access to individuals. In addition there are ongoing initiatives to provide rural areas access to technology in order to reduce the gap between it and urban areas. The government has set policies to promote innovation and create a competitive environment, including business incubators to empower youth. It also works on integrating information technology in the different governmental agencies to help providing enhanced healthcare, education and justice services and e-government transactions.

Despite the above mentioned, Egypt still has many challenges ahead including the modernization of infrastructure to fulfil the needs of citizens for technologies and communications, and strengthening trust and security, notably legislations, i.e. on cybercrime, data protection and e-commerce. All these are currently either being discussed in parliament or are still under development.

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