Economic and Social Commission for Western Asia

UNITED NATIONS
الاسكوا
ESCWA

Outlook of the Information Society in the Arab Region

2003-2015

Economic and Social Commission for Western Asia

Outlook of the Information Society in the Arab Region

2003 - 2015

"The March Towards a Digitally Integrated Arab World"

UNITED NATIONS
Beirut

Background

The information society refers to the efficient processing of information, whether production, exchange, adaptation and use for the purpose of socioeconomic development. The importance of building the information society stems from its role in achieving sustainable development and economic growth as well as responding to internationally agreed development goals such as the outcomes of the World Summit on the Information Society (WSIS) and WSIS+10.

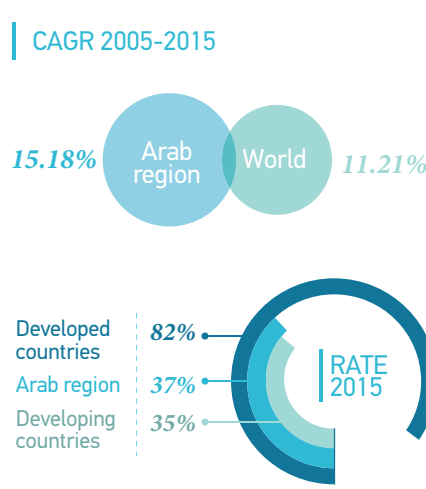
Within this context, the Technology for Development Division (TDD) published in 2015 the seventh edition of the Regional Profile of the Information Society in the Arab Region[1], which measures and evaluates the progress of the Arab Region in building the information society as follow-up to the WSIS. Unlike previous editions, which were biennial in nature, this edition covers the period 2003 – 2015. Each chapter analyses the status and progress of member countries according to selected WSIS action lines and is substantiated by case studies, success stories and best practices from the region. Each chapter also identifies the strength and weakness of the Arab region and provides recommendations for advancing the information society.

ICT infrastructure

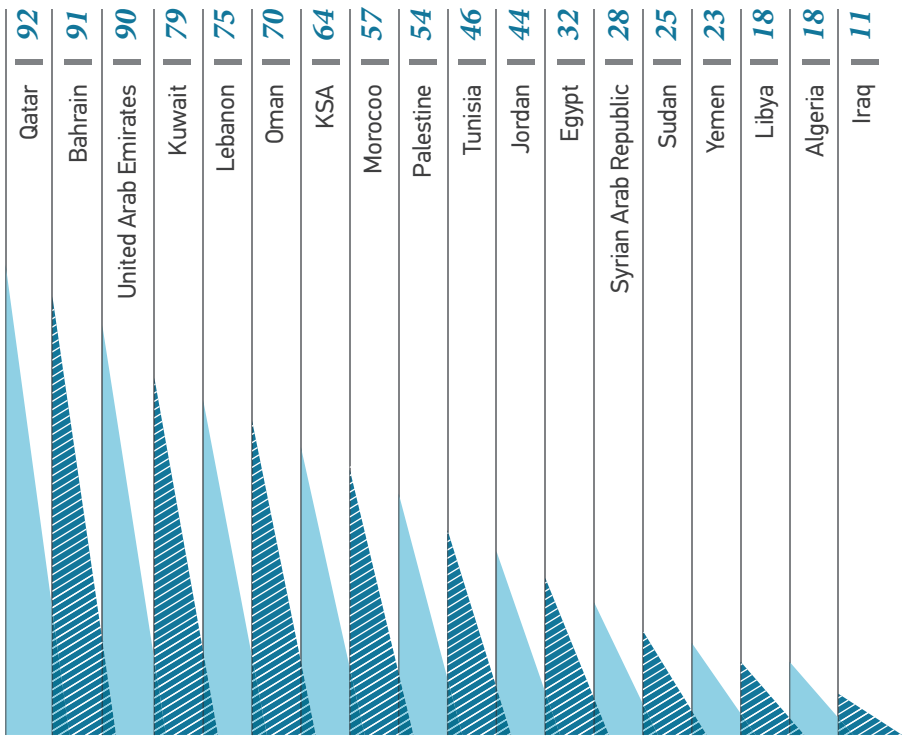
Information and Communication Technology (ICT) infrastructure in the Arab Region witnessed rapid developments with the emergence of new generations of mobile networks and the increasing internet bandwidth via fixed and mobile networks. This is caused by government investments as well as market growth and competitiveness. Internet and mobile penetration rates have been steadily increasing since their appearance in the market, whereas mobile broadband penetrations showed a strong boost.

a) Internet penetration

The Internet penetration rate reached 37 per cent in the Arab region by 2015, whereas internet penetration in the world averaged at 43.4 per cent. The compound annual growth rate (CAGR) for the Arab region reached 15.18 per cent between 2005 and 2015. The world rate registered 11.21 per cent during the same period. The Arab region lags behind developed countries (CAGR of 82 per cent) in Internet penetration, but overtook the average of developing countries (35 per cent).



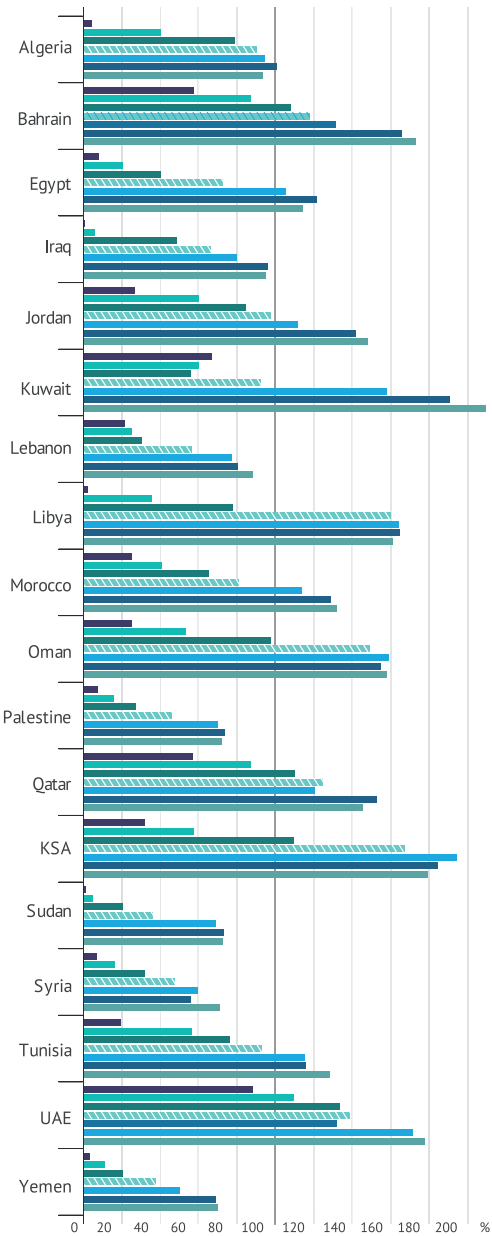
Internet Penetration Rates in selected Arab countries in 2014 (%)



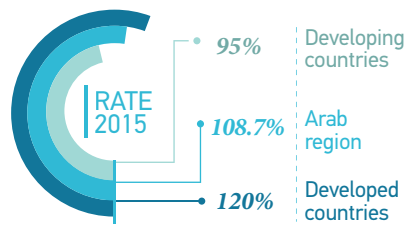
Source: Compiled by ESCWA based on data from ITU

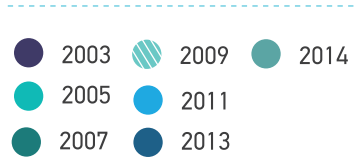
b) Mobile phone penetration

Mobile Subscription Rates in selected Arab countries between 2003 and 2014



The mobile service market is a point of strength in the Arab Region's ICT infrastructure as it has greatly improved in terms of competition and sophistication. Mobile service penetration rates in the Arab Region reached 108.7 per cent by 2015, which surpassed the world average of 96.8 per cent. CAGR reached 15.78 per cent in Arab countries between 2005 and 2015, whereas CAGR for the world was 11.7 per cent. It is evident that the Arab Region surpasses the mobile penetration rate of developing countries (95 per cent) by a good margin, while still trailing behind developed countries (120 per cent).

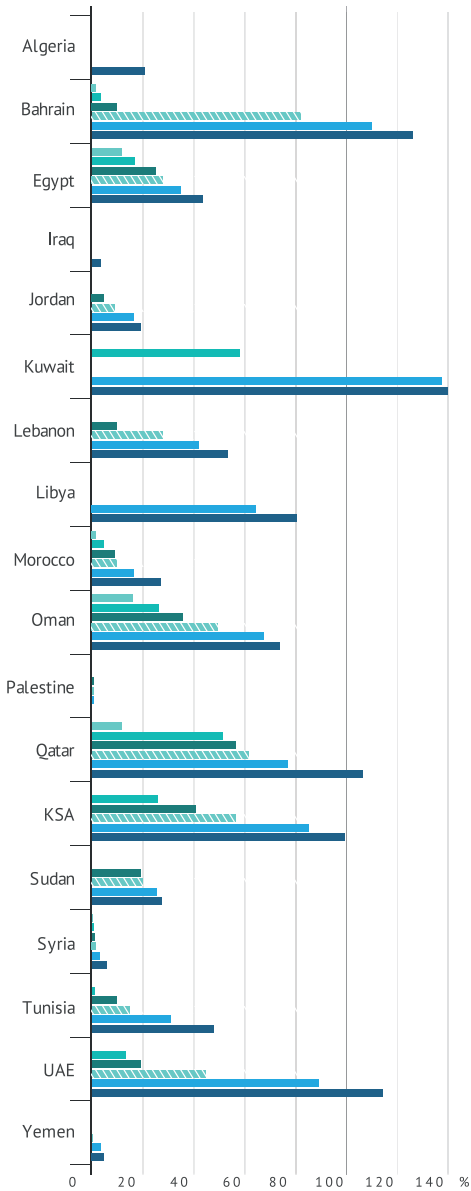




Source: Compiled by ESCWA based on data from ITU

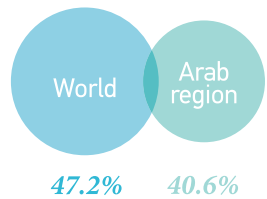
c) Mobile broadband penetration

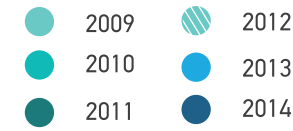
Mobile Broadband Penetration Rates in selected Arab countries between 2009 and 2014



Mobile broadband penetration rate for the Arab Region by 2015 had an average of 40.6 per cent which is less than the world average of 47.2 per cent. The prevalence of mobile broadband services, almost ten times more than that of fixed broadband services, regardless of the high cost of these mobile services, is the result of the weak quality of fixed network services, and the shift to 4G networks, which has already started, and is expected to fuel further growth in the near future.

Mobile broadband penetration rate 2015



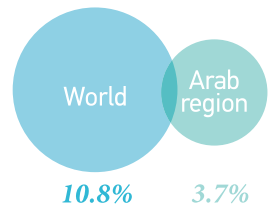


Source: Compiled by ESCWA based on data from ITU.

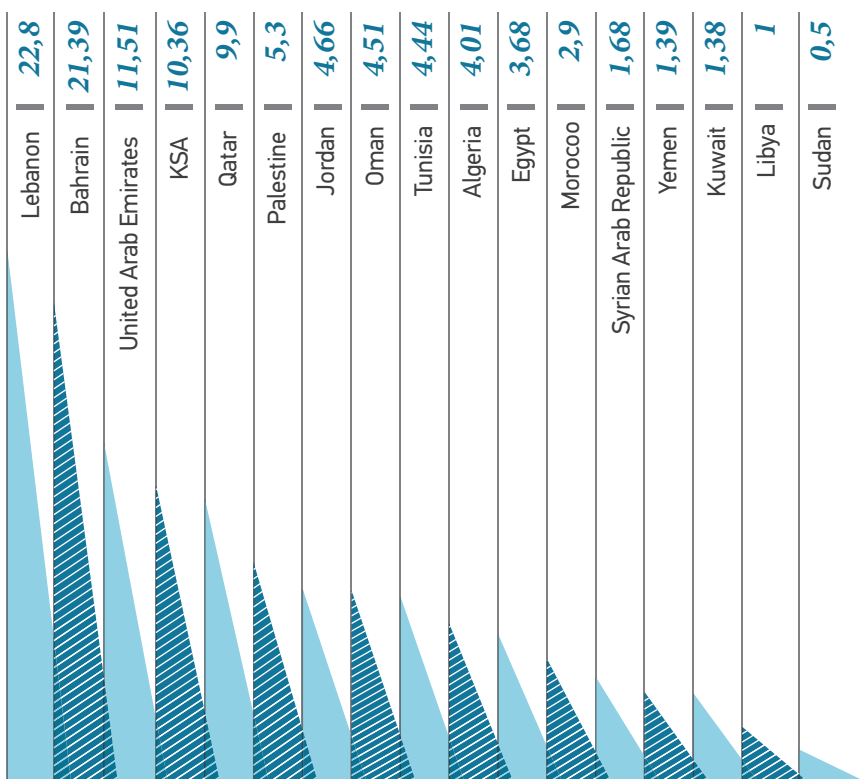
d) Fixed broadband penetration

Fixed broadband penetration rates in the Arab Region by 2015 did not exceed 3.7 per cent, which is significantly less than the world average (10.8 per cent). This is due to its high cost and the decline of fixed line penetration rates.

Fixed broadband penetration rates in the Arab Region by 2015



Fixed Broadband Penetration Rates in selected Arab countries in 2014 (%)



Source: Compiled by ESCWA based on data from ITU.

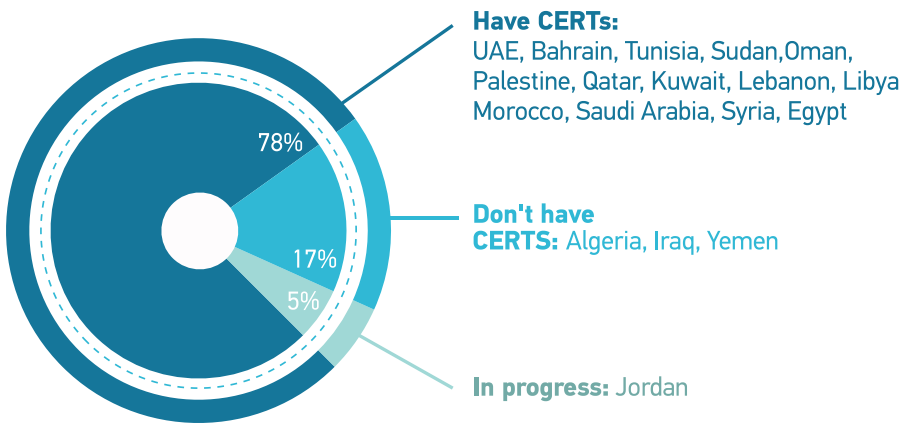
Building trust and security in ICT

The risk of cybercrime increases with the increased usage of ICT such as the widespread internet, e-transactions, and social networks. This highlights the need for the development of technical, regulatory, legal and institutional frameworks at the national and regional levels to enhance security in the cyberspace. There is also a pressing need to raise awareness about the changing and new methods of cybercrime and the damage it can cause.

a) National strategies, laws, and Computer Emergency Response Teams

Most Arab countries in the region have established Computer Emergency Response Teams (CERTs) at varying degrees of functionality and ability to provide the necessary protection. National cyber-security strategies, if existent, remain incomplete and uncoordinated nationally and regionally, and often there is no specific entity that is responsible for cyber-security. The following chart shows the progress of establishing CERTs in the Arab Region in 2015.

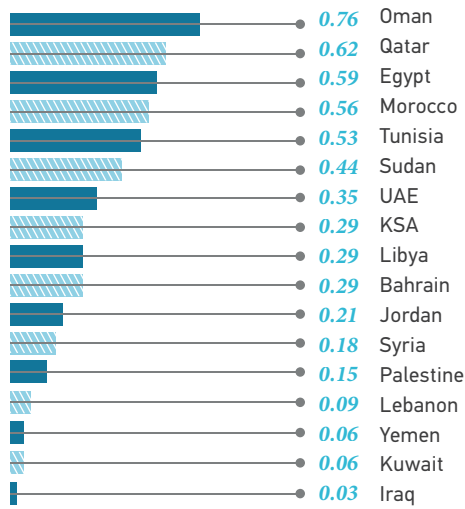
CERT presence in the Arab region in 2015



b) Global Cyber-security Index

In the 2014 International Telecommunication Union's (ITU's) Global Cyber-security Index (GCI) Oman ranked first in the Arab Region, and third globally along with Australia and Malaysia. This is mainly due to Oman's national structural and institutional development, and the existence of cybercrime laws, as well as national efforts to build capacity, and strengthen local and regional cooperation. Oman is followed by Qatar, Egypt, Morocco and Tunisia occupying global ranks 8, 9, 10 and 11 respectively.

Mobile Broadband Penetration Rates in selected Arab countries between 2003 and 2014



Source: ITU, compiled by ESCWA

Enabling environment

The following section highlights selected aspects of the enabling environment in the Arab Region.

a) Intellectual property laws, regulations and international agreements

Innovation and creation of software and content are essential for establishing a knowledge-based economy and strengthening the ICT sector. As patents and trademarks are essential for promoting research and innovation, the importance of adopting and enforcing patent international treaties, protocols and agreements, to take part in the knowledge-based economy at the global level, became apparent.

Arab countries joined several international treaties; for example, most Arab countries adopted the World Trade Organization (WTO) agreements while others are observers. Among the various international treaties, the Paris Convention for the Protection of Industrial Property is the most adopted in the Arab countries, while others are signed by few Arab countries.

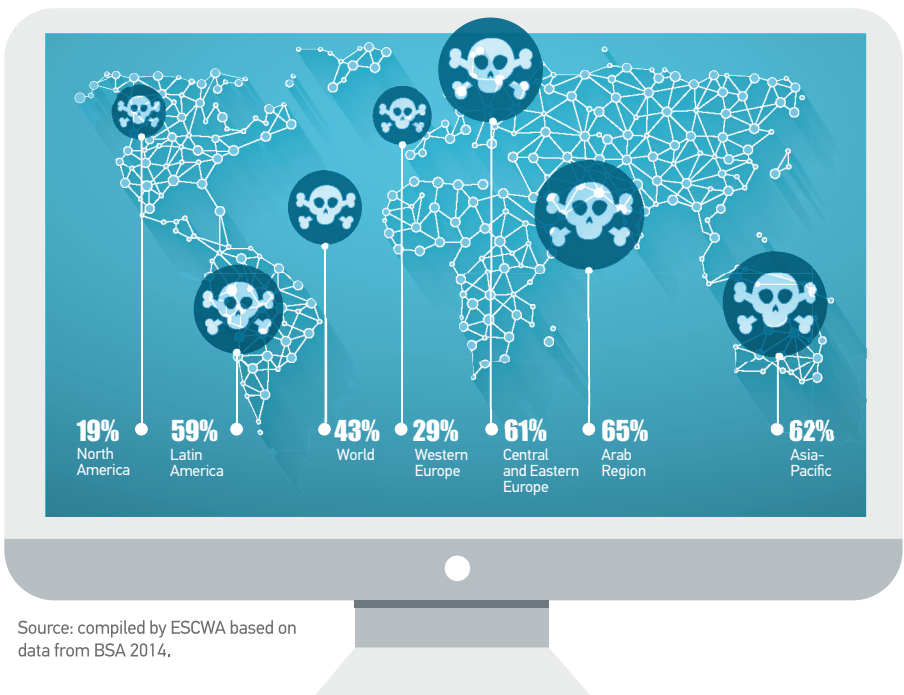
b) Cyber legislation

The interest of the Arab region in combating cybercrime and the prevention of cyber-attacks increased with the growing danger in the misuse of ICT. Much effort has been made by countries to formulate and adopt laws related to cybercrime, or to amend existing laws to include items about fighting cybercrime. However, judicial authorities are often not qualified to handle cybercrime. Consequently, it is necessary to establish institutions for the enforcement of IT related laws to build confidence and increase cooperation at the national, regional and international levels in order to combat cybercrime. It is also necessary to train law enforcement officials, and judges to confront all forms of emerging cybercrime.

c) Software Piracy

Software piracy is considered a critical issue in the provision of an enabling environment for building the knowledge society given its negative impact on the economy. According to the Business Software Alliance (BSA) study, published in 2014[2], the global piracy rate in 2013 was at 43 per cent, and the commercial value of the pirated software reached USD 62.5 billion.

Average rate of unlicensed software use in select regions in 2014

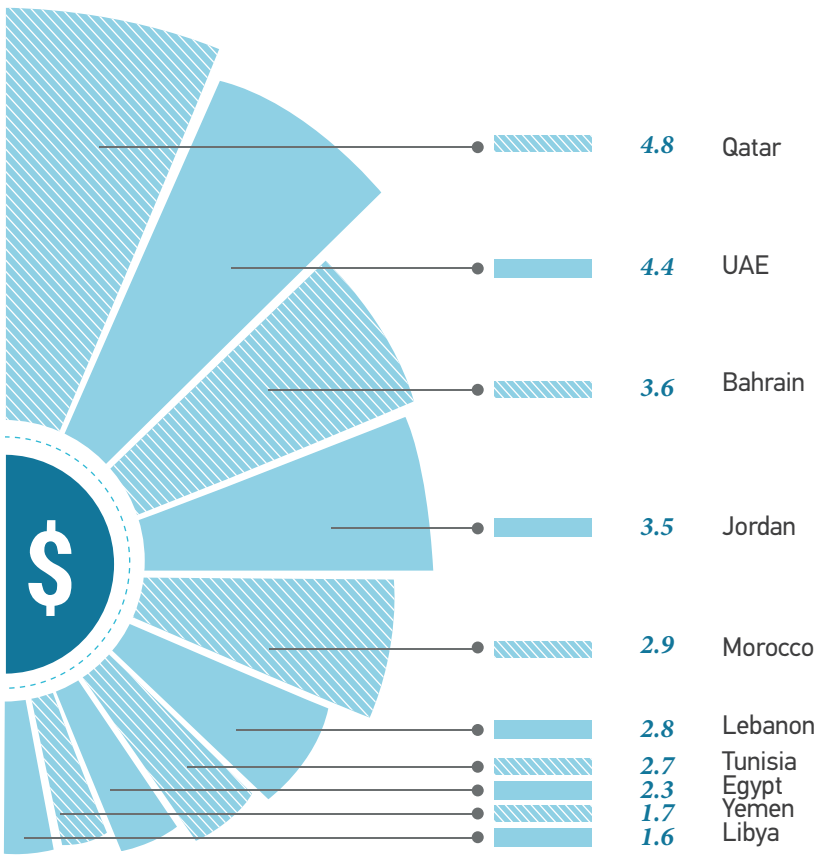


Source: compiled by ESCWA based on data from BSA 2014.

d) Venture capital availability

The availability of venture capital (VC) is essential for promoting innovation and entrepreneurship among the youth, especially in the field of ICT where innovators race to develop and market new products. The overall picture in the region varies with some countries having established VC at the national level and others still lacking the availability of such facilities. For example, GCC countries, with the exception of Kuwait, are leaders in the Arab world according to the survey of the World Economic Forum (WEF) for 2015[3]. It is worthy to note that Qatar ranked first in the world in VC availability.

Venture Capital Availability Index in selected Arab countries in 2015

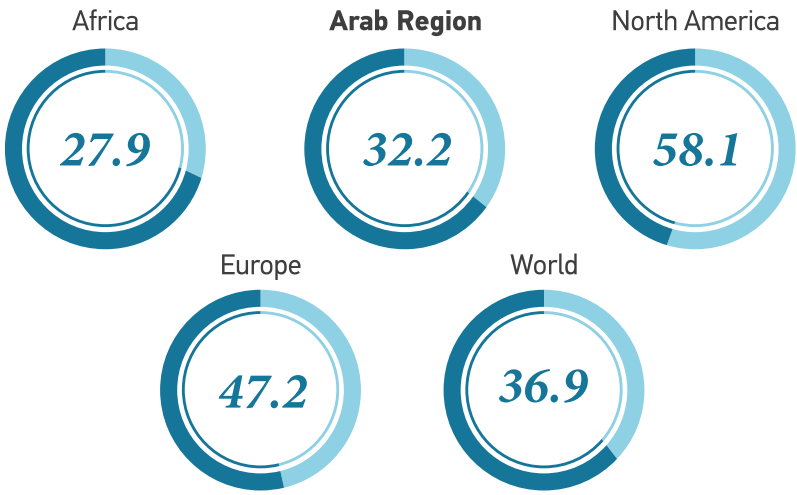


* Score given are out of 7.

e) Entrepreneurship and innovation

The Global Innovation Index (GII)[4], as defined by INSEAD and WIPO, shows that most Arab countries rank lower than non-Arab countries with similar GDP levels, and no Arab country ranked in the top thirty. This means that, although some GCC countries which established venture capital funds have succeeded in attracting investment in technology, the ecosystem for innovation and entrepreneurship still requires special attention from governments, investors and private sector decision-makers. This finding implies that Arab countries have to review their policies and strategies to encourage innovation, knowledge diffusion as well as to promote creativity in goods and services and online content.

GLOBAL INNOVATION INDEX IN SELECTED REGIONS, 2014



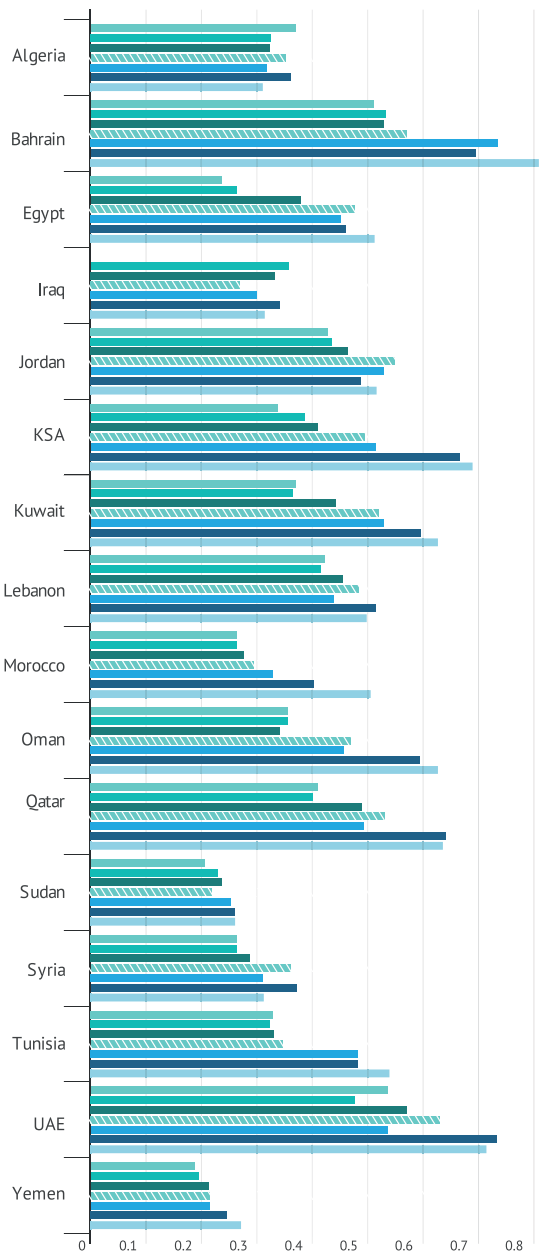
Source: INSEAD, 2014

ICT applications

a) ICT applications in governments

Progress in improving e-government services in the Arab Region continued in most countries in the last few years. However, countries facing political instability suffered setbacks and, in some cases, failure of services as well as lack of data collection for monitoring the performance of e-services.

E-government Development Index of selected Arab countries between 2003 and 2014



Source: Compiled by ESCWA based on data from DESA.

Almost all countries have prepared plans to launch electronic services in government departments, but with varying degrees of success[5]. According to the e-Government Development Index (EGDI), the average for the Arab Region surpassed the world average in 2014, but it still trails behind the average for North American countries. However, GCC countries ranked second in the world, behind Europe.

b) ICT applications in business and commerce

The Arab Region, with the exception of GCC countries, has been slow in accepting e-commerce. This is mainly due to the relatively low standard of living and high level of unemployment in the region. In addition to that, the region is characterized by a general culture of scepticism towards doing business online particularly regarding logistics, the security of transactions, technology speed, reliability of electronic payment systems, limited legal frameworks to build trust, risk of bias and unfair competition, and banks being risk averse due to the high rate of fraud.

According to 2014 estimates, the global e-commerce sales amounted to USD 1.47 billion. The United States ranks first among the countries of the world. The share of the Middle East and Africa is the smallest in the world and the estimates for the year 2018 indicate that it will remain the smallest (around 2.5 per cent).

Contribution of regions to world-wide e-commerce sales, 2015

Source: Compiled by ESCWA based on data from eMarketer - http://www.emarketer.com/Article/Worldwide-Ecommerce-Sales-Increase-Nearly-20-2014/1011039

Building the ICT sector

a) Contribution of the ICT sector in the national economy

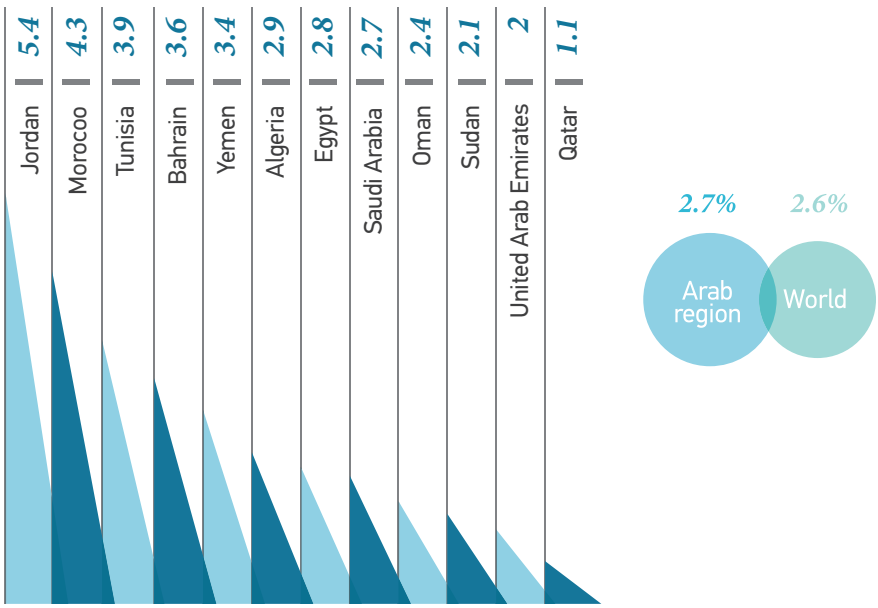
The appropriate level of investment in the ICT sector is expected to lead to substantial benefits to the economy in general, and to various sectors such as health, education and other service sectors. The contribution of this sector to economic growth is measured by values of revenues, investments and expenditure indicators in the field of telecommunications.

The biggest share of telecommunications revenues comes from mobile services (voice and data). Telecommunications revenues in Arab countries have ranged between 2 and 5 per cent of the GDP and the

average in the region was close to the world average most years, surpassing it in 2012 (2.7 per cent in the region compared to 2.6 per cent in the world in 2012). Telecom revenues in Jordan, Morocco, and Tunisia had the highest proportions, while figures were relatively low in Qatar and the United Arab Emirates due to their high GDP.

The largest investments in the telecom sector were in Saudi Arabia, Egypt, Morocco and the Syrian Arab Republic. Political instability in some countries in the region, such as Tunisia, Egypt, the Syrian Arab Republic, have affected investments in the sector negatively.

THE CONTRIBUTION OF THE TELECOMMUNICATION SECTOR TO THE GDP OF SELECTED ARAB COUNTRIES IN 2012 (%)



b) The role of research, development and innovation in the ICT sector

The region is still lagging in research and development (R&D) and innovation activities. This is partly due to the modest number of researchers and developers relative to the population, which is among the lowest figures in the world, and also due to the fact that the budget allocated to R&D remains very weak in the Arab Region. The regional ICT Innovation Index, which is a sub-index of the World Bank Knowledge Index, stood at 6.14, compared to the world average of 7.72[6].

The Information Society and SDGs

In September of 2015, the United Nations adopted the new Development Agenda 2030 including 17 ambitious Sustainable Development Goals (SDGs). The 2030 Agenda affirms the capacity of ICTs in contributing to the three pillars of sustainable development: economic growth, social inclusion and environmental sustainability. ICTs, technologies, and innovation are clearly referred to in several goals and targets.

Building the knowledge society in the Arab Region has to happen within the context of the Development Agenda 2030 since the development of ICT has an important impact on achieving the SDGs. Each SDG can be mapped to means and examples of how technology and innovation could help in achieving it. However, there still remains many challenges faced by the Arab Region in adopting a more information driven society.

Conclusion

While bright spots have been observed in realizing the information society in the region, the digital divide, especially in non-GCC and least developed countries, is still observable. This persistent divide needs to be bridged in order to reap the benefits of ICTs, namely broadband technologies, their potential in sustaining socioeconomic development and transforming the lives of citizens especially the young, women, marginalized communities, and people with special needs.

The quest for building an inclusive information society centered on the human potential requires that the Arab region engages all its stakeholders and delve into the challenges of achieving the 2030 Agenda for Sustainable Development. As such, achieving the 2030 Agenda and the goals of WSIS necessitates a steadfast political will, and concerted efforts to adopt and update national ICT and Science & Technology strategies, in line with the new development goals and aspirations of the region.

[1] ESCWA. 2015. Regional Profile of the Information Society in the Arab Region 2003-2015 [E/ESCWA/TDD/2015/3].

[2] Business Software Alliance, 2014, http://globalstudy.bsa.org/2013/

[3] Global Information Technology Report, WEF 2007-2015 http://reports.weforum.org/global-information-technology-report-2015/ preface-espen-barth-eide-world-economic-forum/

[4] More information on the GII is available at www.globalinnovationindex.org

[5] DESA, E-government Survey 2014. Available at http://www.un.org/en/development/desa/publications/e-government-survey-2014.html

[6] Source: ESCWA. 2013. Competitiveness of the ICT Sector in the Arab Region: Innovation and Investment Imperatives. https://www.unescwa.org/sites/www.unescwa.org/files/publications/files/e_escwa_ictd_13_4_e.pdf