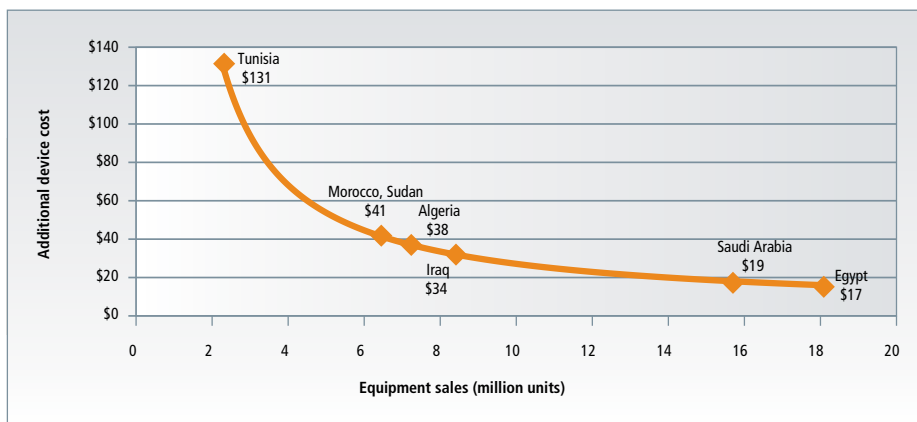


Regional governments will need to work towards achieving band harmonisation across the region, as this is key to achieving scale economies in device and equipment manufacturing, thus extending service affordability. Failure to harmonise could result in additional costs for mobile devices of US\$ 19 per device for Saudi Arabia and US\$ 131 in Tunisia, due to additional production costs. Furthermore, nonharmonised band plans can lead to limited device interoperability, leading to lower device availability. Regional coordination is needed to ensure consumers can benefit from the latest technologies at more affordable prices.



Figure 5: Additional device cost in the absence of spectrum harmonisation



Source: Strategy Analytics, Deloitte analysis

A clear, consultative and transparent plan is required to deal with the spectrum issues highlighted above and deliver the expected economic impacts of additional spectrum release. This includes providing the regulatory certainty needed to promote investment in the region, particularly in the context of spectrum awards and associated requirements.

Effectively, to ensure successful outcomes for consumers, regulators need to ensure fair and transparent award procedures. This includes framing coverage obligations within the context of each country, taking into account the increasing competition levels found in the sector. In the context of spectrum pricing, regulators could benefit from considering the promotion of service demand and operator investment as desirable outcomes that support long-term revenue generation. Indeed, the region could benefit from an approach to licensing that focuses on long-term utility maximization for society rather than short-term price maximization for the treasury.

The wider regulatory agenda requires a clear, consistent and collaborative approach that fosters industry development

In many markets in the Arab States, regulators are taking a relatively transparent and objective approach to developing and implementing regulatory remedies. While the details of the remedies may be questioned by some, regulators in UAE, Bahrain and Qatar, among others, have been credited with creating a stable environment that encourages long-term investment.

However, other markets have experienced increased politicisation of the regulatory authority. When combined with the lack of long-term regulatory policy, this adds to market uncertainty, acting as a barrier to investment. This impacts consumers directly through reduced service availability and price competition, while also reducing foreign direct investment (FDI) and growth prospects.

The sustainability of the mobile industry and its contribution to the long-term growth of the economy is dependent on having a well-functioning regulatory regime. Governments should prioritise the development of coordinated comprehensive national ICT policies that lead to new regulatory frameworks to support the ever-increasing investment by mobile operators in support of next-generation data services. The following areas have been identified as enablers of further growth in the region:

- **Reduced taxation rates for mobile services:** A number of countries in the region have high taxes on mobile services, for example Jordan, Morocco and Egypt. In many cases, these are a result of the application of mobile-specific or 'luxury' tax rates and arise from governments finding mobile easier to collect taxes from than workers or industries that exist in the informal economy. However, this fails to recognise the positive externalities of mobile, the increased affordability of mobile technology and the decreasing margins that the industry faces. A general restructuring or rebalancing of the tax system could lead to no net decrease in taxation revenues while recognising those industries that make positive contributions to long-term growth.
- **Network infrastructure liberalisation:** In some countries, for example Egypt and Iraq, the government-controlled incumbent controls the fibre network, and other operators may be forced to pay a high price to access it. Liberalisation of the network is likely to prompt investment in capacity and higher-quality services at a lower price, overcoming the limitations of most national telecom regulatory frameworks, which were conceived at a time of legacy and depreciated copper networks.
- **Universal service funds (USFs):** Mobile operators are required to pay into these funds, often representing a significant proportion of revenue, for example up to 2% of revenues in Morocco and 3% in Algeria. However, it is not always clear that the funds are being spent on infrastructure projects, and often funds are targeted towards the fixed network operators. Consideration should be given as to whether USFs are still valid, given the high population coverage of mobile services in the region and, in cases where a further roll-out is required, this should be targeted at data services and mobile operators, given the opportunity to compete alongside fixed operators for funds.



The need to maximize the opportunity

The mobile telecommunications sector is already making a significant contribution to society and the economies of the Arab States. Furthermore, the potential for it to make an increasing contribution to the success and growth of the Arab States is clear with the provision of mobile data and mobile broadband services.

This report identifies a number of fundamental challenges, in terms of the availability of spectrum and the nature of regulation, that threaten to limit countries' ability to capitalise on this opportunity. The investment required to extend current networks and invest in more bandwidth-heavy technologies is only likely to occur with the creation of a transparent, predictable and stable environment.



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Arab States Mobile Observatory 2013

Executive Summary



Mobile is a transformative technology that has had a significant economic and social impact upon the Arab States

Mobile is unlike almost any other technology in its ability to transform the way people communicate and to positively impact the economies and societies they live in. It is an enabling technology whose real power is in letting people across the economy conduct their business efficiently and with a universality that cannot be approached otherwise.

The Arab States comprise the more mature markets of the Arab Middle East, including the oil-rich economies of the Gulf States, and the big and growing markets of North Africa, with populous nations such as Egypt and Sudan. The region is also home to a very large young population that has driven recent political changes and will be key in the adoption of new mobile technologies.

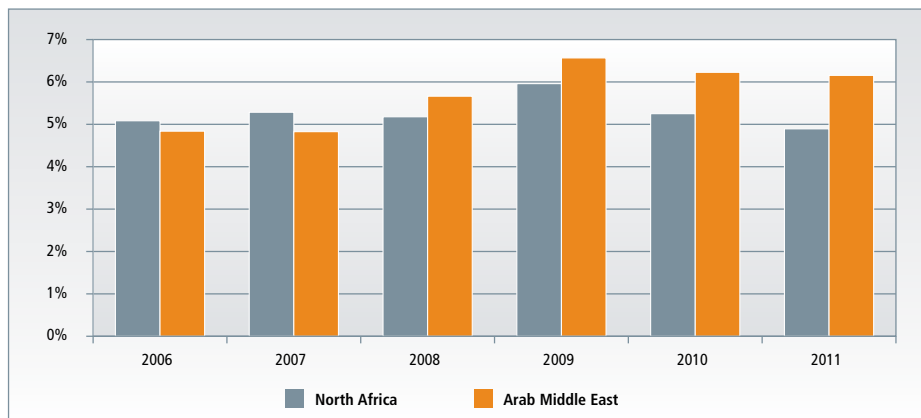


Mobile penetration¹ has increased greatly over the past few years and now reaches well above 100% in many countries of the Arab States. The telecommunications sector has been partially liberalised and competition has increased service affordability. This has generated a remarkable rate of growth in the mobile market across the region, the second highest worldwide after sub-Saharan Africa.

The increased access to mobile services has brought significant benefits to the populations of the Arab States, in terms of economic impact, support to employment, social development and productivity growth across the economy. In addition, the mobile industry represents a valuable alternative to oil-based activities in the Gulf States, contributing to diversification of the economy.

The estimated economic impact of the mobile sector has stabilised around 5–6% as a percentage of GDP across the Arab States in the past few years, with a peak in 2009 due to lower than usual GDP growth as a result of the global financial crisis².

Figure 1: Total economic impact of mobile in the Arab States as a proportion of GDP



Source: Deloitte analysis

The overall estimated economic impact of mobile included:

- The supply-side impact, consisting of the economic impact created by the mobile operators directly, by the players in the wider mobile ecosystem and by the multiplier effect that these activities generate in the wider economy. In 2011, these impacts were estimated at 2.9% and 4.2% of GDP in North Africa and the the Arab Middle East, respectively.
- The impact of mobile technologies on improvements in efficiency and productivity that mobile technologies delivered to so called high-mobility workers. These benefits were estimated at 2% of GDP across the Arab States.

¹ Throughout the report and unless otherwise stated, mobile penetration is defined as total mobile connections, i.e., SIM cards, as a percentage of population. Unique subscriber penetration is discussed in more detail in Section 2.

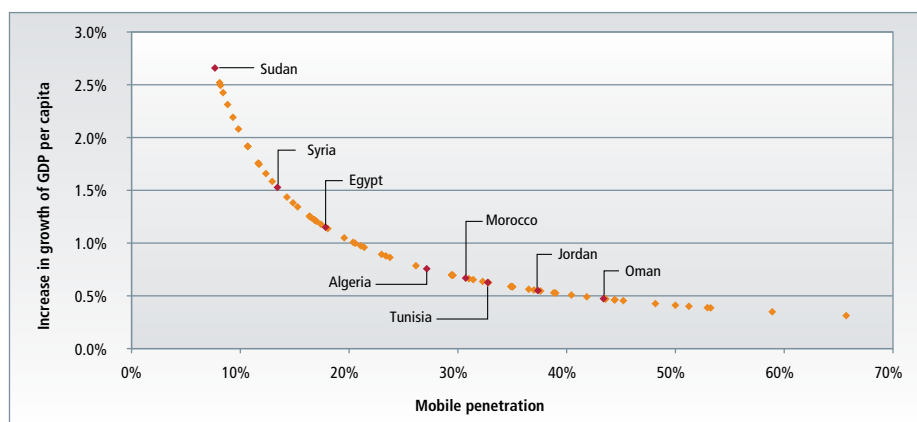
² For details on the assumptions for the modelling of the economic impact of the mobile industry, the traffic projections and the impact of spectrum release, see Appendix D.

The employment created across the Arab States as a result of the availability of mobile technologies is estimated to be more than 1.2 million FTEs in 2011. This consists of direct employment by the mobile operators, employment across the mobile ecosystem and the multiplier effect, that is, the employment generated in the wider economy as a result of interactions with the mobile ecosystem. This is particularly compelling in the Arab States, in light of the recent statement by King Abdullah of Jordan at the World Economic Forum urging entrepreneurs, innovators, educators and policymakers to clear the path to 85 million new jobs that the region needs to create to accommodate new entrants to the job market³. As discussed below, the mobile industry has great potential to help achieve this goal, given an estimated fivefold increase in mobile-related employment in future years if additional spectrum is released.

More widely, the industry has developed services aimed at supporting finance, health and education programmes across the region.

There is considerable literature on the impact of mobile telephony on economic growth and productivity, as development economists have come to recognise mobile as a core means by which societies and economies have transformed and grown. Countries where mobile has grown steeply in the past few years have experienced impressive growth. The figure below shows the effect of increased mobile penetration on a country's productivity.

Figure 2: Predicted effect of a 10% increase in mobile penetration on total factor productivity⁴



Source: Deloitte/GSMA, "What is the impact of mobile telephony on economic growth?", 2012.

The development of mobile broadband is critical to the next phase of development of the industry

With mobile penetration already high in the region, future growth will depend on the development of data services and mobile broadband. In order to achieve this, mobile operators will need to have access to additional spectrum, which should be released in a harmonised way. Existing spectrum assignments to mobile operators in the region may not be sufficient to accommodate the surge in mobile data traffic, which is expected to grow almost 20-fold even without additional spectrum release.

A release of spectrum in the Digital Dividend, 2.6GHz and 1.8GHz bands will contribute to the development of mobile broadband in the region, leading to greater coverage, capacity and mobile data traffic. For instance, in the period between 2015 and 2025, this release of spectrum is expected to lead to an average yearly increase in the number of connections⁵ by over 26 and 34 million in the Arab Middle East and North Africa respectively⁶ above the baseline scenario. As a result of increased traffic, under a series of plausible modelling assumptions as discussed in annex D.2, GDP per capita in the Arab Middle East and North Africa will potentially have an incremental growth rate of 2.5% and 4.4% respectively across the period⁷. This translates into an overall increase in GDP of over US\$ 57.5 billion for the Arab Middle East, and US\$ 50.5 billion in North Africa.

"To widen the gate of opportunity, the region requires entrepreneurs, innovators, educators and policymakers to clear the path to 85 million new jobs."

H.M. King Abdullah II Ibn Al Hussein

³ <http://www.weforum.org/news/king-jordan-outlines-gateways-arab-prosperity-opening-world-economic-forum-meeting>

⁴ Penetration rates are averages for the years 1996–2009.

⁵ Including dedicated mobile broadband connections

⁶ This increment is in addition to the baseline subscribers for the region, a yearly average of 121 million in the Arab Middle East and 136 million in North Africa.

⁷ Based on IMF projections, using average 2016–2017 GDP growth rates as baseline growth. This is based on aggregating the yearly average growth rate of the countries in the region across the periods.

As a result of this increased economic growth, it is expected that additional government contributions from the mobile ecosystem would reach US\$ 528.7 million in the Arab Middle East and US\$ 383.7 million in North Africa. Employment should also be positively affected, with an additional 5.9 million jobs across the Arab States created in the mobile sector and in the wider economy.

Figure 3: Spectrum and mobile broadband impacts (2015–2025)

| | Average increase in mobile connections | Average incremental GDP per capita growth (%) | GDP increase | Additional government contributions from mobile | Additional job creation |
|------------------|--|---|-------------------|---|-------------------------|
| Arab Middle East | +26.4 million | 2.5% | +US\$57.5 million | +US\$528.7 million | +1.9 million |
| North Africa | +34.5 million | 4.4% | +US\$50.5 billion | +US\$383.7 million | +4.0 million |

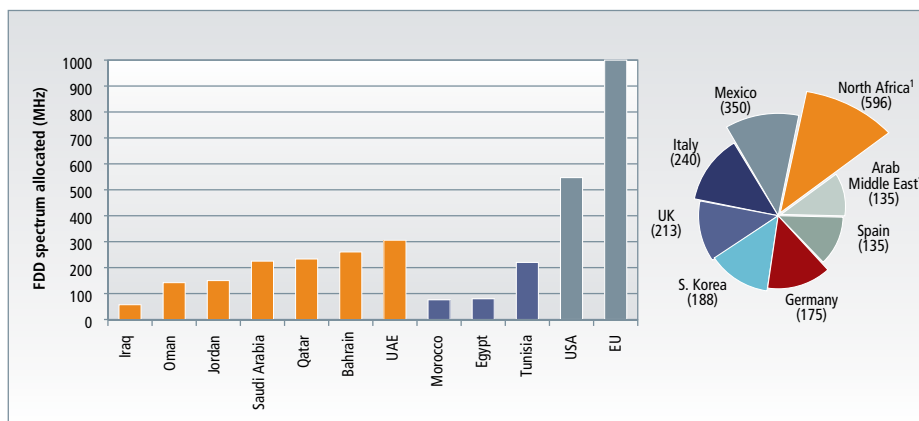
Source: Deloitte Analysis



A clear, consultative and transparent plan is required to deal with spectrum issues to deliver upon this opportunity

Governments in the region can realise these impacts by ensuring an adequate supply of spectrum, allocated in line with internationally harmonised bands. Current spectrum levels for mobile communications in the region are considerably lower than in more developed economies. This is particularly the case for North African countries, where high numbers of connections per MHz allocated make them more prone to network congestion.

Figure 4: FDD spectrum assignments to mobile and number of connections per MHz of FDD spectrum, in thousands (2012)



Deloitte analysis, GSMA. ¹North Africa: Morocco, Egypt, Tunisia. Arab Middle East: Iraq, Bahrain, Qatar, Jordan, UAE, Oman, Saudi Arabia.

Governments in the region will need to consider releasing additional spectrum across different bands, so that spectrum with different qualities is made available and a spectrum shortfall is avoided. The Digital Dividend band (700–800MHz) offers better indoor penetration and undergoes lower propagation losses, making it ideal to increase coverage and capacity in both urban and rural areas. The 1.8GHz band would benefit from liberalised spectrum licensing that would allow operators to maximise current spectrum use, with the offering of LTE services through reforming of current allocations. Additional bands such as the 2.6GHz band are deemed to be suitable for supporting increased network capacity.