

The Mobile Economy Middle East and North Africa 2016

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The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with almost 300 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai and the Mobile 360 Series conferences.

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Executive Summary

Overall growth slowing but diverging trends across region

By mid-2016, there were 339 million unique subscribers across the Middle East and North Africa (MENA) region, accounting for 60% of the population. Global subscriber penetration overtook MENA during 2014, with MENA now the second least penetrated region in the world. There is though huge variation between countries in the region, from the advanced Gulf Cooperation Council (GCC) states where 77% of the population on average are mobile subscribers, to some of the African Arab states such as Comoros, Djibouti and Somalia where subscriber penetration is less than 30%.

Subscriber growth rates will slow further over the next few years due to the more advanced markets approaching saturation, the challenge of growing penetration in the less developed markets, and unstable political and economic conditions in several markets that are currently showing little sign of improvement. As a result, subscriber penetration will reach only 63% by 2020, below the global average of 73%.

Migration to mobile broadband, smartphones and other advanced services continuing

The region is seeing continuing migration to mobile broadband services, helped by the expansion of 3G coverage. By mid-2016, mobile broadband (3G and above) accounted for more than 40% of connections, up from just under 30% in 2014. Growth in mobile broadband connections over the next five years will be relatively rapid: 61% of total connections will be mobile broadband by 2020.

4G is starting to accelerate despite the comparatively late arrival of 4G networks in the region. Since the first LTE networks were launched in late 2011, a total of 40 LTE networks have launched in 17 countries, and three more countries plan to launch LTE networks in the next few years.

The number of smartphone connections has more than doubled over the last three years to reach 263 million in Q2 2016, accounting for 42% of total connections in the region. MENA will see the second fastest growth in smartphone adoption of any region over the next few years (behind Sub-Saharan Africa), bringing smartphone adoption to 65% by 2020, largely closing the gap on the global average.

Revenues returning to growth

MENA has historically been one of the fastest growing regions in terms of recurring revenues. However, 2013 and 2014 saw a reversal of this growth, with recurring revenues declining by 1.9% and 1.5% annually in 2013 and 2014 respectively. Slowing subscriber growth and the socioeconomic conditions in the region are the major factors behind this decline.

Looking forward however, revenues are likely to grow modestly as mobile operators continue to monetise the strong growth in data traffic and as mobile broadband uptake continues. Growth will not return to the levels previously enjoyed in the region due to further slowing of subscriber growth, ongoing political and socioeconomic instability, increasing competition and the cannibalisation of traditional revenues by IP messaging platforms. Thus, mobile operators are under pressure to diversify their revenue streams, implement new services and find effective ways to monetise the growth in data traffic to counteract the revenue squeeze.

Mobile delivering economic growth

In 2015, mobile technologies and services generated 4% of GDP in the MENA region, a contribution that amounted to more than \$150 billion of economic value. In the period to 2020 this will increase to almost \$200 billion (4.2% of GDP) as countries benefit from the improvements in productivity and efficiency brought about by increased take-up of mobile services.

The mobile ecosystem also supported more than 1 million jobs in 2015. This includes workers directly employed in the ecosystem and jobs indirectly supported by the economic activity generated by the sector. In addition to the mobile sector's impact on the economy and labour market, it also makes a substantial contribution to the funding of the public sector, with \$15 billion raised in 2015 in the form of general taxation.

Mobile delivering innovation

Mobile has emerged as the platform of choice for creating, distributing and consuming innovative digital solutions and services in MENA. Many local and global innovators and tech entrepreneurs are now using the expansion of the mobile ecosystem and the growing adoption of smart devices in the region to deliver mobile-based solutions that directly appeal to local interests and cultures.

Numerous countries in the region are playing a leading role in innovation: Israel is quickly becoming recognised as a hot-bed for innovation in the digital space, attracting record levels of investment; Amman in Jordan has been labelled as one of the best cities in the world in which to launch a tech start-up; Turkey's position between East and West makes it fertile ground for start-ups, particularly in the e-commerce space; and Iran has plans to become a regional leader in the development of innovative digital solutions following the lifting of international economic sanctions.

Meanwhile mobile operators in other countries in the region, particularly in the GCC markets (Dubai in the UAE for example), are launching advanced services around initiatives such as smart cities, the Internet of Things (IoT) and digital identity.

Mobile addressing social challenges in MENA

In the less advanced countries in the region, mobile technology is playing a central role in addressing a range of social challenges, including unregistered populations, the digital divide, financial inclusion and disaster response.

Mobile is addressing the challenge of unregistered populations in MENA, where more than 120 million people lack an official form of identification. Mobile technology is well placed to address the challenge of birth registration, given high penetration levels and geographic coverage, particularly in rural areas. Improved identity and registration services are key to bringing about digital inclusion, improving access to financial services, and providing effective responses to disasters and humanitarian crises.

Mobile internet adoption in MENA continues to grow rapidly; the number of mobile internet subscribers surpassed 200 million (36% of the population) by mid-2016, with an additional 87 million expected by 2020. However, in developing countries in the region, such as some of the African Arab States, more than two thirds of the population on average do not use the mobile internet. Even by 2020, more than half of the population in countries such as Somalia and Djibouti will remain offline. Significant barriers to adoption remain, such as affordability and lack of awareness of the benefits of the internet.

Mobile money continues to improve financial inclusion in MENA, and there are now 20 live services in 10 markets. Mobile money is having a significant impact enabling efficient and convenient payments and international money transfer, particularly for the 60% of the population without access to formal financial services. Financial regulation will be key to unlocking the possibility of non-bank mobile money services expanding into underserved segments in the region.

Mobile technology can also play an important role in the event of a humanitarian crisis in the region, which is home to some of the most vulnerable countries in the world. By facilitating critical communication between humanitarian agencies, affected populations and the international community, the mobile industry is providing more effective, coordinated support to humanitarian responders and disaster-affected populations.

Regulatory modernisation can help drive growth and stability

To strengthen the case for further investment in mobile broadband networks in MENA, the region's governments need to review and refresh their regulations, taxation policies and spectrum rules. Consumers, companies and governments would all benefit from the modernisation of digital regulations to ensure equivalent services are governed by the same flexible, principles-based rules.

At the same time, policymakers need to ensure that there is sufficient spectrum available to meet rising demand for mobile broadband and that their taxation policies encourage, rather than discourage, adoption of mobile services. Some countries in MENA also need to address key infrastructure bottlenecks, such as international gateways, to ensure their citizens and companies have affordable internet access.

By taking a principles-based approach to regulation, taxation and spectrum allocation, policymakers will drive economic growth and increase stability.

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Source: GSMA Intelligence

MOBILE ECONOMY MIDDLE EAST & NORTH AFRICA

Unique subscribers



Accelerating moves to mobile broadband networks and smartphone adoption





Mobile contributing to economic and social development across MENA



Delivering digital inclusion to the still unconnected populations Mobile internet penetration 2015: 34% 2020: 47%



Delivering financial inclusion to the unbanked populations in 10 markets in MENA via 20 service providers as of December 2015



Delivering innovative new services and apps Number of cellular M2M connections to reach 27.7m by 2020

Mobile industry contribution to GDP



Public funding

Mobile ecosystem contribution to public funding before regulatory fees



Employment

O.5m JOBS Directly supported by mobile

ecosystem in 2015



Plus an additional **0.6M** indirect jobs supported in 2015

1 Industry overview

1.1 Overall growth slowing but diverging trends across region

By mid-2016, there were 339 million unique subscribers¹ across the MENA region, accounting for 60% of the population. This followed relatively strong subscriber growth of 6% on average annually over the last five years. Global subscriber penetration overtook MENA during 2014, driven by strong subscriber growth in both Sub-Saharan Africa and Asia Pacific (where growth was more than 10% per annum). As a result, MENA fell behind Asia Pacific to become the second least penetrated region in the world, ahead of Sub-Saharan Africa (43%) but well behind the global average of 63%.

1. Unique users who have subscribed to mobile services at the end of the period, excluding M2M. Subscribers differ from connections such that a unique user can have multiple connections

Figure 2	
Figure 2	

Unique subscribers in MENA



Source: GSMA Intelligence

The regional penetration figure masks significant variations at the country level in terms of mobile market maturity. In the GCC states², 77% of the population on average are mobile subscribers, and three of these markets (Bahrain, Kuwait and the UAE) have a subscriber penetration rate of over 90%, placing them among the most penetrated mobile countries in the world. By contrast, the non-GCC Arab States have an average subscriber penetration rate of 56%, and this sub-region is home to three markets with subscriber penetration rates below 30% (Comoros, Djibouti and Somalia).

Although subscriber penetration is below the global average, multi-SIM ownership in many countries - particularly the GCC states - translates into a relatively high connections³ penetration rate: 110% on average across MENA in Q2 2016, compared to 99% globally. In Bahrain, Qatar and UAE for example, the SIM ratio (SIMs per unique subscriber) stands at over two, leading to a connections penetration rate of close to or over 200%. As with subscriber penetration however, some markets such as Djibouti and Comoros have much lower SIM ratios of around 1.3, resulting in a connections penetration rate of below 40%.

Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE. Unique SIM cards (or phone numbers, where SIM cards are not used) that have been registered on the mobile network at the end of the period. Connections differ from subscribers such that a unique subscribe can have multiple connections.

Figure 3

MENA penetration by country



Source: GSMA Intelligence

GDP per capita is an important factor in this variation of penetration rates given the impact on the affordability of mobile services. GDP per capita across the GCC markets – the most advanced in mobile terms – ranges from just under \$40,000 in Oman to over \$140,000 in Qatar. Meanwhile across the less penetrated countries of North Africa and the non-GCC Arab States, no country has a GDP per capita of more than \$15,000. This diversity is reflected not just in penetration but also in technology migration and the adoption of advanced devices and mobile services.

Figure 4

MENA subscriber penetration by sub-region

Q2 2016



Source: GSMA Intelligence

Subscriber growth will slow dramatically over the next five years, with a CAGR of 3% between 2015 and 2020, half that of the period between 2010 and 2015. Although this growth rate is faster than that of developed regions such as Europe and North America, it is slower than the global average of 4% and the developing world in general. This means the region will fall further behind in terms of subscriber penetration, reaching 63% by the end of 2020 compared to a global average of 73%.

This slowdown is based on several factors:

 declining potential of further subscriber growth in already highly penetrated markets (such as the GCC states)

- the challenge of growing penetration in the often lower income and rural-based groups in less developed markets (such as some of the non-GCC Arab States)
- unstable political and economic conditions in some markets showing little signs of improvement (such as in Iraq, Syria, Turkey and much of North Africa).

Iran and Egypt accounted for more than a third of regional subscribers in mid-2016. Four markets, Egypt, Iraq, Algeria and Iran, will contribute more than half of the additional 47 million people that will be connected by mobile services across the MENA region by 2020.

Figure 5

-

Contribution to subscriber growth in MENA



Source: GSMA Intelligence

1.2 Migration to mobile broadband continuing

Subscribers in MENA are increasingly migrating to mobile broadband services, with mobile playing a crucial role in providing Internet access given the general lack of fixed broadband infrastructure in the region. By the middle of 2016, mobile broadband (3G and above) accounted for more than 40% of connections, up from just under 30% in 2014. While this is below the global average of 51%, it once again hides variation across the region. In Israel and Kuwait, for example, mobile broadband connections accounted for 88% and 84% of total connections in Q2 2016 respectively, and will account for over 95% by 2020. At the other end of the scale, only 4% of connections in Somalia were mobile broadband in Q2 2016, and Comoros and Palestine have yet to launch 3G networks.

Growth in mobile broadband connections over the next five years will be relatively rapid, with a CAGR of 14% between 2015 and 2020 compared to a global average of 13%. Mobile broadband connections will overtake 2G in early 2018, and 62% of total connections will be mobile broadband by 2020.

Figure 6

Technology migration in MENA



Percentage of connections

Source: GSMA Intelligence

Expansion of 3G coverage throughout the region is helping drive the uptake of mobile broadband services: population coverage has increased from around 50% in 2011 to just over 75% by Q2 2016. However, difficult geographic and socioeconomic conditions have limited coverage expansion in some countries, particularly the expansive, desertdominated countries such as Sudan and Iran where 3G coverage remains below 50%. The relatively slow uptake of 4G (3% of connections in Q2 2016 versus 19% globally) reflects the comparatively late arrival of 4G networks in the region: the first live LTE networks were launched by Zain Saudi Arabia, Etisalat UAE and Viva Kuwait in late 2011. A total of 40 LTE networks have launched in 17 countries since, but there are still eight countries without a 4G network. Three of these countries (Djibouti, Egypt and Libya) plan to launch LTE networks in the next few years. Figure 7

LTE launches across MENA



	LIVE	PLANNED
Algeria	1	2
Bahrain	4	0
Comoros	0	0
Djibouti	0	1
Egypt	0	3
Iran	3	1
Iraq	1	2
Israel	3	0
Jordan	2	1
Kuwait	3	0
Lebanon	2	0
Libya	0	1
Mauritania	0	0

	LIVE	PLANNED
Morocco	3	0
Oman	2	0
Palestine	0	0
Qatar	2	0
Saudi Arabia	3	0
Somalia	2	4
Sudan	1	0
Syria	0	0
Tunisia	3	0
Turkey	3	0
UAE	2	0
Yemen	0	0

COMOROS

Source: GSMA Intelligence

Newer developments in network technology are now also beginning to be deployed in the more advanced markets of the MENA region. There are currently seven live LTE Advanced networks in four countries in MENA (Morocco, Somalia, Turkey and Tunisia), and 11 networks have launched VoLTE services across six countries (Turkey and all the GCC states except for Oman).

Bidding imminent for 4G licences in Egypt

On 16 August 2016, Egypt's regulator NTRA approved the final terms for the country's 4G rollout. The decision to update the licence terms came after only fixed line incumbent Telecom Egypt accepted the original terms, with mobile operators Orange, Vodafone and Etisalat having refused. In order to prioritise existing carriers the regulator decided to revise the terms, and the licences were amended to include additional frequencies. Pricing and the condition that half of the licence fee payment be made in US dollars remained unchanged. The government hopes to raise around EGP22 billion (\$2.5 billion) from the process.

Telecom Egypt has already agreed to pay EGP7.08 billion (\$806 million) for its 4G concession, with EGP5.2 billion paid upfront and the remainder in instalments over a four-year period. Meanwhile, talks have been taking place between the Egyptian authorities and representatives from Saudi Telecom and Lebara KSA over the possibility of the two companies acquiring a 4G concession in Egypt.



The rollout of mobile broadband networks across the region has led to a sharp increase in capex over the last few years, reaching a peak of \$12.4 billion in 2014 (20% of recurring revenues). However, despite further investments in 2015 (Zain Iraq for example invested \$212 million in capex during the course of the year, mainly in network expansion in the northern region of the country), and some upcoming spectrum auctions (such as in Egypt), capex levels have decreased slightly and will only show modest growth to 2020.



Capex in MENA

Figure 8

Source: GSMA Intelligence

Delays in service launches, coupled with slow rollout across most of North Africa, political instability and potential issues around affordability mean that 4G will still only account for 16% of regionwide connections by 2020, well below the global average of 37%. It should be noted that there may be a potential upside to these forecasts as more networks are launched and if governments and mobile operators can overcome some of the barriers to future growth.



1.3 Growing adoption of smartphones and other advanced services

The growth of mobile broadband subscribers across MENA largely reflects the rising smartphone adoption rate: the number of smartphone connections has more than doubled over the last three years to reach 263 million in Q2 2016, accounting for 42% of total connections in the region. While this is below the global average adoption rate of 48%, MENA will see the second fastest growth in smartphone adoption of any region (behind Sub-Saharan Africa), adding a further 204 million smartphone connections by 2020. This will bring smartphone adoption to 65%, broadly in line with the global average. Once again, there is huge diversity in the region. The UAE has the highest smartphone adoption rate in the world, with 83% of connections being smartphones. Three other markets – Kuwait, Israel and Oman – also have adoption rates above 70%. Meanwhile, smartphones accounted for fewer than 20% of connections in Comoros and Somalia in Q2 2016. These markets will see rapid growth over the next few years, and smartphone adoption will triple by 2020 to reach 49% and 45% respectively.

Figure 9

Diversity in smartphone adoption

Percentage of connections



Source: GSMA Intelligence

Much of this growth will be driven by declining prices and the increasing availability of low-cost smartphones. Smartphone average selling price (ASP) dropped to \$196 in 2015 across MENA, down from \$261 in 2012,⁴ with more devices available for less than \$150. For example, Ooredoo Tunisia offers the Alcatel Pixi First for TND119 (\$54). Similarly, in January 2016, Chinese manufacturer Xiaomi started selling its smartphones in the region: the cheapest offerings are the Redmi from Zain Saudi Arabia for SAR399 (\$106) and the Redmi 2 Pro from Etisalat UAE for around AED449 (\$122).

Relaxing of sanctions will spur smartphone growth in Iran

Economic sanctions related to Iran's nuclear programme have now been lifted, although other sanctions remain in place. This should help to reduce prices stemming from high tariffs on foreign smartphone imports, and will bring about SIM registration that will curb the flow of illegal devices into Iran. As one example, the Iranian government is preparing to allow local retailers to import iPhones legally for the first time, having previously threatened to ban iPhones entirely from the country in an attempt to curb the huge market in smuggled Apple products. Such initiatives, coupled with the increase in lower-cost smartphones, will drive smartphone adoption in Iran up to just under 60% by 2020, from 37% in 2015.

^{4.} Source: Strategy Analytics

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Non-GCC Arab States









As consumers migrate to mobile broadband and smartphone adoption grows, use of data services is also increasing. More and more people across MENA are using IP messaging apps such as WhatsApp and Telegram (the latter is seeing widespread adoption in both Iran and Iraq). In some of the more advanced markets such as Saudi Arabia, Qatar and Israel, more than four-fifths of mobile phone owners use IP messaging apps more frequently than SMS, and

Figure 10



IP messaging in MENA

Source: GSMA Intelligence Consumer Survey 2016

Additionally, according to a study by Northwestern University in Qatar, 82% of internet users in the Middle East use Facebook.⁶ Meanwhile, an Ericsson ConsumerLab study reported that use of certain mobile services in Turkey was above that of advanced markets such as the US, the UK, Germany and South Korea: 79% of smartphone users used social media via mobile and 80% used instant messaging via mobile on a daily basis.

This use of additional services is driving strong growth in mobile data traffic:

• Vodafone Egypt reported 87% growth in data traffic in 2015

• Djezzy Algeria stated that mobile data traffic more than doubled between Q2 2015 and Q2 2016

around 10% more use them, albeit less frequently.

Even in less developed markets across North Africa,

such as Algeria, Egypt and Morocco, more than half

of mobile phone owners use IP messaging apps.⁵

In most countries surveyed, usage has increased

over the last year, particularly in the less developed

markets where more and more people are using IP

messaging more frequently than SMS.

- Zain reported annual data traffic growth of 144% in 2015 across all its networks, driven mainly by the 3G launch in Iraq and LTE launch in Jordan
- According to CEO Peter Kaliaropoulos, Touch (Zain) Lebanon data traffic tripled from 15 TB per day to 45 TB in 2015 as a result of the launch of its '4.5G' multi-carrier LTE-A network. Daily volumes of more than 350 TB are expected before the end of 2020.

Source: GSMA Intelligence Consumer Survey 2016
 Source: Media use in the Middle East 2016, Northwestern University in Qatar

Ericsson forecasts that mobile data traffic will grow seven-fold between 2015 and 2020 across MENA, reaching 1.7 EB per month by 2020. This represents an average annual growth rate of just under 48%, higher than the global average of 42%. The amount of data used monthly by each unique subscriber will increase substantially from an average of 0.7 GB in 2015 to 4.4 GB in 2020. Mobile data consumption is particularly high in Saudi Arabia, where an average subscriber will consume more than 10 GB of mobile data by 2020, by which time mobile will account for around a quarter of total IP traffic (up from around 10% in 2015).

Growth in data traffic is leading to rapid growth in data revenues across the region: in Saudi Arabia, Zain reported a 58% rise in data revenues in 2015 (excluding SMS and VAS) as the operator invested heavily and expanded its 4G LTE network; Irancell (MTN) data revenue grew by 90% annually in 2015; and Asiacell (Ooredoo) Iraq reported double-digit growth in data revenues in 2015 following the launch of 3G services in January 2015.

On average across the region, data revenues grew by 27% in 2015 to reach \$17 billion and 27% of recurring revenues, up from 22% in 2014 and 14% in 2012. This proportion is considerably more for mobile operators in the more advanced markets; 38% and 48% in Q1 2016 for Zain Bahrain and Vodafone Turkey respectively, and 48% in Q2 2016 for Ooredoo Oman. By 2020, mobile data revenue will have grown by an annual average of 6.3% to \$23 billion, accounting for 35% of recurring revenues.

Figure 11

Mobile data in MENA to grow rapidly over the next five years





Mobile data revenue (\$ billion)

Source: Ericsson, GSMA Intelligence

1.4 Revenue returning to growth

Fuelled by increasing subscriber penetration and the ongoing migration to mobile broadband and data, MENA has historically been one of the fastest growing regions in terms of recurring revenues, growing at just under 4% annually (in US dollar terms) between 2010 and 2015. However, 2013 and 2014 saw a reversal of this growth, with recurring revenue declining by 1.9% annually in 2013, then declining a further 1.5% in 2014. Slowing subscriber growth, increased competition and a more general slowdown due to political, economic and social conditions across the region are the major factors behind this decline.

The impact was particularly evident in Syria, where MTN reported substantial operational challenges related to social unrest, including 50% availability of the radio network and fuel and power shortages. Coupled with significant currency devaluation, recurring revenue declined by 40% in 2013 versus 2012. Meanwhile, mobile operators in Sudan were hit by a steep 35% devaluation in local currency against the US dollar during 2013: Zain, while performing well on a local currency basis (up 18% year on year), reported a decline in revenues in US dollar terms of 28%.

2015 showed signs of recovery, with recurring revenues in the region growing by 2.1% on the previous year. Zain Saudi Arabia reported an 8% increase in revenues annually in 2015, a reversal of the 5% decline reported in 2014. This was mainly due to the increase in mobile data revenues. Similarly, in Egypt, Vodafone reported 12.3% annual growth in recurring revenues in 2015 as a result of increased data and voice usage and a more stable economic environment. This was a marked improvement on the 5.7% decline reported in 2014. There was also an improvement in margins, with EBITDA increasing to 36.5% of total revenues on average across the region in 2015, up from 34.8% in 2014.

Looking forward, revenue is likely to grow modestly as mobile operators continue to monetise the strong growth in data traffic (for example, by offering a range of data bundles). However, growth will not return to the levels previously enjoyed in the region due to further slowing of subscriber growth, ongoing political and socioeconomic instability, increasing competition and the cannibalisation of traditional revenues by IP messaging platforms. In Iraq, for example, continued instability plus the introduction of a 20% sales tax on mobile services (coupled with tax increases on other sectors in the country) are affecting spending on mobile services. Consequently, Zain Iraq reported an 11% decrease in revenues in the first half of 2016.

With growth forecast at a CAGR of 0.9% per annum between 2015 and 2020, mobile operators are under pressure to diversify their revenue streams, implement new services and find effective ways to monetise the growth in data traffic to counteract the revenue squeeze.





Recurring revenue

Revenue trends in MENA

Source: GSMA Intelligence

2 Mobile as the platform for the digital economy in MENA

2.1 Mobile delivering economic growth

The mobile ecosystem consists of mobile network operators, infrastructure service providers, retailers and distributors of mobile products and services, handset manufacturers and mobile content, application and service providers. The direct economic contribution to GDP of these firms is estimated by measuring their value added to the economy, including employee compensation, business operating surplus and taxes.

In 2015, the total value added generated by the mobile ecosystem was around \$52 billion (or 1.4% of GDP), with network operators accounting for the vast majority.

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Source: GSMA Intelligence

2.1.1 Indirect and productivity impacts of mobile technology

In addition to their direct economic contribution, firms in the mobile ecosystem purchase inputs from their providers in the supply chain. For example, handset manufacturers purchase inputs from microchip providers and content providers require services from the IT sector. Furthermore, some of the profits and earnings generated by the ecosystem are spent on other goods and services, stimulating economic activity in those sectors.

We estimate that in 2015, this additional economic activity generated a further \$13 billion in value add (or 0.3% of GDP) in the region.

The use of mobile technology also drives improvements in productivity and efficiency for workers and firms. There are three ways in which this takes effect:

- The first is the use of basic mobile voice and text services, which allows workers and firms to communicate more efficiently and effectively (for example, reducing unproductive travel time). There is significant variation across MENA in mobile connections penetration, ranging from less than 30% in Djibouti and Comoros to more than 100% in Qatar and the UAE.
- The second is the use of 3G and 4G technology, which allows workers and firms to use mobile data and internet services (for example, improving access to market information in the agricultural sector). The impact of mobile internet is particularly important in countries where a significant proportion of the population can only access internet via a mobile platform, for example in Egypt and Iraq.
- The third is the next generation of mobile services, in particular M2M and the Internet of Things, which will allow firms to improve equipment maintenance and operations (e.g. using sensors to monitor the health of machinery), optimise inventory (e.g. tracking real-time inventory so it can be replenished when needed) and save on energy costs (e.g. using intelligent energy

management systems to reduce unnecessary energy use). It also has the potential to improve public services such as health and utilities. Given that such services are still in the early stages of development, this impact was limited in 2015 but it will grow in the coming years, particularly in countries that are likely to be early adopters of the technology, such as Kuwait and Qatar.

We estimate these productivity impacts were worth around \$91 billion in 2015 (or 2.4% of GDP).

Overall, taking into account the direct, indirect and productivity impacts, in 2015 the mobile industry made a total contribution of \$156 billion to MENA economies in value added terms, equivalent to 4% of the region's total GDP.

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Figure 14

Total (direct and indirect) contribution to GDP

\$ billion, % 2015 GDP



Note: totals may not add up due to rounding Source: GSMA Intelligence

2.1.2 Mobile contribution to employment and public funding

In 2015 mobile operators and the ecosystem provided direct employment to approximately 0.5 million people in the region. In addition to this, economic activity in the ecosystem generates jobs in other sectors. Firms that provide goods and services as production inputs for the mobile ecosystem (for example microchips, transport services etc.) will employ more individuals as a result of the demand generated by the mobile sector. Furthermore, the wages, public funding contributions and profits paid by the industry are spent in other sectors, which provide additional jobs.

We estimate that in 2015, around 0.6 million jobs were indirectly supported in this way, bringing the total impact (both direct and indirect) of the mobile industry to 1.1 million jobs.

Figure 15

Employment impacts

Jobs, thousands



Note: totals may not add up due to rounding Source: GSMA Intelligence

2.1.3 Public funding contribution

The mobile ecosystem also makes a significant contribution to the funding of public sector activity in the region through general taxation. For most countries, this includes value added tax, corporation tax, income tax and social security from firms and employees. We estimate that the ecosystem made a tax contribution to the public finances of the region's governments of \$15 billion in 2015.

Figure 16

Contribution to public funding by the mobile industry

2015, \$ billion



Note: totals may not add up due to rounding Source: GSMA Intelligence

2.1.4 Outlook and trends in the period 2015–2020

Going forward, we expect the economic contribution of the mobile industry in MENA will continue to increase in relative and absolute terms. In value-added terms, we estimate that the ecosystem will generate \$194 billion by 2020 (4.2% of GDP). The majority of this increase will be driven by improved productivity, in particular from the increasing adoption of mobile internet services.

Figure 17

Outlook to 2020

\$ billion, % of GDP



Source: GSMA Intelligence



2.2 Mobile delivering innovation

Accelerating mobile broadband migration and rising smartphone penetration are leading to significant growth of the digital economy and expansion of the mobile value chain in MENA. Coupled with a growing proportion of educated young people and increasing entrepreneurial activity, more and more examples of innovation are emerging in the region with mobile as the enabling technology.

An increasing number of start-ups are finding success in MENA, over 80% of which since 2010 have been launched by local stakeholders.⁷ There are currently three unicorns in the region:

- Souq.com, an e-commerce platform founded in Dubai, UAE in 2005, often described as the Amazon of the Middle East. It is the largest e-commerce platform in the Arab world, attracting more than 24 million unique visits per month
- Infinidat, founded in Israel in 2011, offers enterprise storage solutions and has a valuation of \$1.2 billion
- **IronSource**, also from Israel, is an online software distribution and monetisation company, founded in 2009.

As home to two of the three 'unicorns' in the MENA region, Israel is guickly becoming recognised as a hot-bed for innovation in the digital space. It hosts a booming start-up scene (most notably in Tel Aviv, ranked one of the world's most innovative cities) supported by growing venture capital, seed funds, accelerators, co-working spaces, free Wi-Fi, and frequent start-up competitions. Many scientific research institutes, high-tech companies and international venture-capital firms are headquartered in Israel, allowing start-ups to attract record levels of investment. VC funding in Israel peaked in 2015, surpassing \$2 billion invested through over 300 deals - a 26% increase on 2014 and an almost four-fold increase on 2012 (by comparison, VC funding in the US "only" doubled between 2012 and 2015). Over 55% of this funding in the last two years has been in the internet or mobile sector.

7. Source: Wamda







Source: CB Insights

Israel is emerging as the leading world site for artificial intelligence (AI), with many global firms such as IBM and Intel expanding their AI footprint in the country. For example, Asus recently announced the Zenbo home robot, which was developed at Intel's Israeli AI centre. More broadly, Israeli startups are utilising AI in various verticals, including healthcare and security. MedyMatch, for example, applies AI in the form of "deep vision and advanced cognitive analytics" to the analysis of medical imaging scans to help radiologists or emergency department physicians recognise hard-to-spot abnormalities and in turn make better decisions. Deep Instinct meanwhile applies deep learning technology to cybersecurity, enabling cyber-attacks to be identified and blocked in real-time by an "artificial brain" before any damage can be done. Table 1

Examples of successful Israeli companies and start-ups in the digital space

Company	Description	Notes
fiverr	A global online marketplace launched in 2009, offering tasks and services starting from \$5 per job performed	Has received \$110 million in funding to date, and generates close to 1 million transactions per month
Gett 🕻	An Uber-like Israeli start-up launched in 2011 connecting customers with taxi drivers through its smartphone app. Operates in more than 50 cities, and is expanding into on-demand delivery of other goods and services, from dry cleaning to champagne	Has received \$513 million in funding to date, including \$300 million from Volkswagen Group in May 2016
ironSource	An online software distribution and monetisation company, founded in 2009, that offers a complete ecosystem for online and mobile applications	Has received \$185 million in funding to date, and recent valuations have gained it 'unicorn' status
MOBILEYE	Founded in 1999, a technology company that develops vision-based advanced driver assistance systems (ADAS) providing warnings for collision prevention and mitigation	IPO of £1 billion in 2014 (the biggest Israeli IPO to date), and is now valued at more than \$10 billion
€moovit	Real-time, crowd-sourced public transit app and mapping service launched in 2012 featuring live arrival and departure times, up-to-date line schedules, local station maps and service alerts	Has received \$81.5 million in funding to date and has over 30 million users
Viber	Israeli-founded instant messaging and voice-over-IP (VoIP) app for smartphones launched in 2010	Acquired by Rakuten in February 2014 for \$900 million, and now has around 300 million registered users worldwide
@waze	Founded in 2006, a GPS-based navigation app for smartphones and tablets providing turn-by-turn information and user-submitted travel times and route details	Acquired by Google in 2013 for \$1.1 billion, the first Israeli consumer-app company to be bought for over \$1 billion
WiX	A cloud-based web development platform launched in 2006 that allows users to create HTML5 web sites and mobile sites through the use of their online drag and drop tools	IPO in 2013 raised \$127 million; it is now valued at \$1.45 billion

Source: CB Insights, GSMA Intelligence

Turkey is also gaining ground as a leader in digital technology, with its rapid economic growth helping fuel an explosion of technology-based businesses and home-grown innovation. The country's position between East and West makes it fertile ground for start-ups and multinational businesses alike, and innovation is bolstered by investments and incentives from the government, including numerous 'technoparks' across the country, offering tax exemptions and reduced operating costs to encourage investments in the technology sector.

One particular area of growth is mobile banking and e-commerce. A young population and rapid technology migration means many people are using mobile devices for banking and shopping: Turkey is third in the world in the use mobile devices for e-commerce, and more than 4 million people in Turkey use mobile banking.⁸ Three of the top four fastest-growing companies in Turkey in 2015 – Cardtek Payment Processing Services, 724tikla and PayTR – are e-payments or e-commerce solutions.⁹

Iran meanwhile is hoping to re-engage with the global community following the lifting of international economic sanctions by the UN, US and EU in January 2016. The government has highlighted technological development as one of its three top national priorities over the next five years, and R&D budgets have been marked for a 400% increase by 2030, reaching 4% of GDP. At the grass-roots level, opening up the country to foreign investment will make it much easier for start-ups to attract funding. Additionally, local NGOs such as the Iran Entrepreneurship Association are trying to foster home-grown innovation by organising awareness campaigns and supporting policies aimed at creating a better entrepreneurial environment for Iran's youth. In parallel, the government is beginning to relax regulation around mobile and the internet, reversing decisions limiting internet speeds for residential users and issuing 3G and 4G licences to the country's two main mobile operators (MTN Irancell and MCI). If these initiatives are successful, Iran could become a regional leader in the development of innovative digital solutions.

The on-demand economy is gaining traction in MENA, and international internet players are forming partnerships with mobile operators. For example, in November 2015, Uber announced it is investing \$250 million in expanding its MENA activities, and has partnered with Zain to offer enhanced service quality in target markets, which currently include Bahrain, Jordan and Saudi Arabia. Similarly, Dubaibased start-up Careem is also finding success in the taxi hailing space, expanding into over 25 cities in the region with over 40,000 drivers and 2.5 million registered users. Additionally, UK on-demand food delivery startup Deliveroo has secured \$100 million to expand into Asia and the Middle East.

Elsewhere in the region, particularly in the GCC markets, mobile operators are launching other advanced services around initiatives such as smart cities, the Internet of Things (IoT) and digital identity.

Source: TechCrunch
 Source: Technology Fast 50 Turkey 2015, Deloitte

Smart cities and the Internet of Things

IoT has the potential to offer a range of innovative solutions to challenges facing communities and governments across the region. A number of these issues have become particularly pressing, with high levels of population growth, a youthful population and economic/political insecurity and conflicts affecting a growing number of countries. By harnessing the ongoing expansion in wireless connectivity, IoT is delivering affordable, scalable, secure and proven services and technologies that are helping cities address these issues and achieve their goals.

The IoT market in MENA is mainly driven by the involvement of a number of countries' governments in smart city plans, which play a central role in their economic development strategies. With advances in utilities, fleet management, citizen engagement and other areas, many cities throughout the region have the foundations in place to take the next step towards an integrated city, fit for future growth, while significantly reducing costs of utilities and public services.

• Egypt: In February 2016, Etisalat launched its IoT application platform in collaboration with Oberthur Technologies, enabling enterprise customers to quickly deploy new IoT and M2M (machine-to-machine) services

- **Qatar:** In December 2015, Ooredoo announced the successful completion of a smart metering trial in Doha in partnership with state electricity utility Kahramaa, as part of the Lusail smart city plan
- **Turkey:** In January 2016, Turkcell launched a new loT service for smart homes leveraging ultra-low energy solutions from DSP Group. The technology will enable a host of new applications such as home automation, safety, monitoring services, energy management and assisted living
- UAE: In March 2016, Dubai's smart city initiative, Smart Dubai, announced the launch of Smart Dubai Platform, an integrated control centre that will manage data generated by smart city systems. Du has been selected as the connectivity partner for this project
- Various: Zain has acquired neXgen, a smart city advisory firm, and plans to develop smart solutions in its markets throughout the region (Bahrain, Iraq, Jordan, Kuwait, Lebanon and Saudi Arabia).







Digital identity for a connected society

Across many industries such as entertainment, banking, health and e-government, services and processes are becoming both more digital and more mobile. This has resulted in unprecedented efficiency and convenience for individuals and businesses alike. However, consumers are increasingly demanding to access these services securely, shielded by robust privacy safeguards and strong data protection delivered by digital identity capabilities.

- As part of the UAE Emirates Identity Authority's 'My number, my Identity' campaign, Du and Etisalat provide a service that allows people to renew Emirates IDs digitally without visiting service centres
- The Saudi Arabian government is mandating biometric fingerprinting on all SIMs for reasons of security. Jordan and UAE are heading in the same direction
- Jordan has partnered with Gemalto for its national elD card programme, reinforcing the infrastructure required for digital signatures and access to future e-government services.

Mobile Connect is a secure universal log-in solution, and the new standard in digital authentication. It uses the consumer's unique mobile number to verify and grant online access anywhere the user sees the Mobile Connect logo, providing clear advantages to consumers. It eliminates the ever-increasing number of passwords needed to securely maintain online identities; gives consumers control over their data, helping them interact online with confidence; reduces the risk of fraud for service providers when users access their services; and can reduce the number of abandoned online transactions.

Mobile Connect is already available to more than 2.8 billion consumers globally, and while it has arrived only recently in the MENA region, some markets are experiencing early traction, particularly in highly populated areas. There have been three deployments of Mobile Connect in the region to date: Orange in Egypt and Jordan, and Meditel in Morocco. Various other operators are committed to launching Mobile Connect services, including STC in Saudi Arabia, du and Etisalat in UAE, and Umniah and Zain in Jordan.

B Mobile addressing social challenges in MENA

Across the highly diverse MENA region, 40% of the population do not currently subscribe to mobile services, and a further 24% only use voice and text services. It is primarily in the developing countries of the region where subscriber penetration is at its lowest: in Somalia for example, only 30% of the population subscribe to mobile services, leaving 70% unconnected. Meanwhile in Mauritania, although subscriber penetration is relatively high, only 14% of the population use the mobile internet.

These developing countries face numerous challenges to connectivity, including difficulties in expanding network coverage, affordability, limited digital skills and a lack of locally relevant content. Mobile is helping overcome these barriers, while also providing identification solutions and responses to humanitarian crises. This in turn is improving financial and digital inclusion prospects across the region. Figure 20

MENA subscribers (percentage of population) by country

Q2 2016



Source: GSMA Intelligence

3.1 The potential for mobile to provide digital identity for all in MENA

The international community recognises identification as a fundamental enabler of socioeconomic and political development. Without proof of identity, citizens cannot access certain essential services, assert rights or fully participate in the digital and analogue worlds. The World Bank estimates that 1.5 billion people, or 20% of the world's population, lack an official ID, and this has been identified as a key challenge to progress. For this reason, one of the UN's Sustainable Development Goals is to provide legal identity to everyone (including birth registration) by 2030.

Identification has even greater relevance in the increasingly digitised global economy, with individuals requiring a digital identity if they are to participate in the digital societies of the future. Robust digital identity systems can produce huge savings for citizens, government and business; can increase transparency and accountability; and can drive innovation. The rise of mobile and digital technology provides a transformative opportunity to offer new identity services that are more efficient and effective than paper-based and traditional identity systems. A global survey conducted by Boston Consulting Group found that digital identity systems create gains in efficiency and convenience that could save taxpayers up to \$50 billion per year globally by 2020.¹⁰ Well implemented digital identification systems can have a significant positive impact on financial inclusion, gender equality, access to health services and social safety nets, and governance.

A national ID system exists in all countries in MENA, and all countries except Syria have issued e-IDs. Despite this, 122 million people across the region (22% of the population) are not registered. The problem disproportionately affects those in rural areas, vulnerable populations and women, compounding challenges such as asserting property rights and gaining access to financial services or subsidies. Failure to register a birth and the lack of an official ID can make it difficult for children to access primary healthcare facilities or governmentfunded vaccination programmes, and can lead to exclusion from the education system. Mobile technology can play an important role in national identification programmes. Potential use cases for mobile identity solutions include:

- enabling civil registration (births, deaths and change of marital status)
- enabling access to government payments and accelerating the uptake of e-government services
- enabling access to financial services.

In the case of civil registration, birth registration is a fundamental stepping-stone in ensuring the provision of an official identity. Birth registration is mandatory in all countries in MENA, but a substantial proportion of births are still not registered. On average across the region, 83% of births are registered, but in some countries such as Yemen and Somalia, this falls to only 17% and 3% respectively. Challenges include inefficient communication between rural communities and national birth registration offices, and a lack of awareness of the problems that a lack of birth certificates may cause in the future.

Mobile technology is well placed to address these challenges, given its high penetration levels and geographic coverage, particularly in rural areas. Mobile identity solutions remove the need for individuals to travel to registration centres and can allow for much more efficient registration processes, while mobile operators are able to utilise their extensive networks of retail and distribution agents. Although no major examples of mobile initiatives exist in MENA, operators in other regions are active in this space. In Sub-Saharan Africa, for example, a number of mobile operators including Orange in Senegal, Uganda Telecom and Tigo in Tanzania (in partnership with UNICEF) are already employing their wide geographic reach, particularly in rural areas, to facilitate birth registration processes.

Improved identity and registration services are key in bringing about digital inclusion, improving access to financial services, and providing effective responses to disasters and humanitarian crises.

^{10.} Source: SIA eGov study, based on analysis from Boston Consulting Group, 2013

3.2 Growing digital inclusion through mobile services

Mobile internet adoption has been growing steadily in the region, although penetration levels remain relatively low at around 35%. This is the second lowest of any region (ahead of Sub-Saharan Africa) and below the global average of 46%. Although mobile internet adoption will increase to 47% by 2020 on average, many countries in the region face significant challenges in bringing people online. In developing countries in the region, such as many of the non-GCC Arab States, more than two thirds of the population on average do not use the mobile internet. In Somalia and Djibouti, only 8% and 15% of the population respectively are mobile internet users. Even by 2020, more than half of the population across these countries will remain offline.

Figure 21

Mobile internet penetration



Source: GSMA Intelligence

Digital inclusion – defined here as the expansion of global connectivity and mobile Internet adoption – can extend various economic and social benefits to previously unconnected populations, fuelling a virtuous circle that reduces poverty, improves infrastructure and services, and further increases internet access and usage. By extension, unconnected and underserved communities risk falling further behind, widening the digital divide, if the barriers to digital inclusion remain unaddressed.

The GSMA Connected Society programme works with and on behalf of the mobile ecosystem to address the following four key challenges to increasing digital inclusion:



Network coverage: expanding the commercially sustainable coverage of mobile broadband networks to underserved population groups (typically in rural or remote communities) by promoting infrastructure sharing, regulatory best practice and technical innovation.



Affordability: addressing key issues such as mobile-specific taxation to help make internet access more affordable, especially for citizens at the bottom of the pyramid.



Digital skills and awareness: providing training to people so they understand the benefits and opportunities of being online and have the skills to use the mobile internet.



Locally relevant content: encouraging and promoting the development of content and services that are relevant to underserved population groups.

Just over 20% of the population in the MENA region are not covered by mobile broadband networks, but this varies considerably between the advanced markets, where only 1% of the population are not covered, and the developing countries where a quarter of the population are not covered. Of those who are covered, 335 million do not subscribe to mobile broadband, and 300 million of these are in the developing countries in the region.



Figure 22

Mobile broadband coverage variation in MENA 2015



Source: GSMA Intelligence

There is a gender dimension to the connectivity gap in the region. The GSMA Connected Women programme estimates that approximately 1.7 billion females in low- and middle-income countries across the world still do not own a mobile phone. On average women are 14% less likely than men to own a phone, and even if they do have a phone there is a gender gap in usage, which prevents them from reaping the full benefits of mobile phone ownership. In MENA specifically, 48% of women, roughly 84 million, are unconnected. The main challenges to

Table 2

ownership and usage that women face in markets such as Egypt and Jordan are cost, network quality and security.

A survey of three North African countries conducted by the GSMA revealed that lack of awareness and locally relevant content was the biggest barrier to use of the internet (58% of respondents). This result was particularly evident in Egypt, where 70% of non-users consider it an issue. Some 39% of nonusers identified lack of digital literacy and skills as an issue, making it the second biggest barrier.¹¹

Barrier	Lack of awareness and locally relevant content	Lack of digital skills and literacy	Affordability barrier	Lack of network coverage	Security and trust barrier	Other
Algeria	46%	25%	13%	14%	2%	10%
Egypt	70%	38%	52%	12%	20%	17%
Morocco	51%	53%	33%	2%	2%	8%
North Africa	58%	39%	36%	9%	9%	12%

Main barriers to internet usage

High perceived barrier

Low perceived barrier

Source: GSMA Intelligence Consumer Survey 2015

The cost of handsets and mobile services was identified as the third biggest barrier in North Africa, by 36% of non-internet users. Some service propositions are attempting to address this issue, for example Almas Line in Iraq run by Asiacell (Ooredoo). Asiacell developed a promotion with discounted airtime rates through 'step charging', and enabled women to pick their own peak and off-peak times. Through Almas Line, over 1.8 million female customers have been connected, and

the proportion of female customers in Asiacell's customer base grew from 20% to 40%.¹²

Taxation is an important factor that can affect affordability: increasing the cost to consumers through taxation can reduce demand for mobile services and hence slow the growth of the sector. This is particularly an issue in Tunisia where the taxation level is above the world average.

Source: GSMA Intelligence Consumer Survey 2015. The survey covers 54 countries globally, including three countries in North Africa: Algeria, Egypt and Morocco. In each country, a representative sample of approximately 1,000 people were interviewed face-to-face, and those who had never used the internet were asked what was stopping them.
 Source: Asiacell Almas Line: Serving women's mobile needs in Iraq, GSMA, May 2012

Mobile-specific taxation can hit consumers hard

In **Jordan**, taxes account for almost 44% of the retail cost of mobile usage, making services unaffordable for many citizens, according to a report by Deloitte for the GSMA.¹³ This figure is the second highest worldwide. Mobile services, including calls, SMS and mobile broadband bundles, are subject to a specific tax of 24% in addition to the General Sales Tax of 16% applied to most goods and services. Mobile operators in Jordan also pay a revenue share to the government equivalent to 10% of their operating revenues on top of the 24% corporation tax on profits. As a result, the mobile industry paid almost \$500 million in recurring tax and fees in 2013, equivalent to more than 50% of its revenues in Jordan, severely limiting operators' ability to invest in new infrastructure.

Other countries in the region also levy specific taxes on the mobile sector. In **Tunisia**, consumers pay a 5% ad valorem industry fee on mobile services, such as calls, SMS, MMS, data, international incoming and national interconnection, roaming and mobile money, and on sales of 3G devices. By increasing the cost to consumers, this tax burden reduces demand for mobile services and hence slows growth of the sector. This is a particularly pressing issue within Tunisia: the World Bank found that a representative household in the bottom 40% income bracket would need to spend about 44% of its disposable income to afford mobile broadband services. Moreover, in Tunisia a mobile-specific corporation tax of 35% is levied on the sector, compared to the 25% rate on standard goods and services, curbing the funds available for network investment. The rate is the fourth highest among Arab states. Only two other countries, Yemen and Jordan, impose mobile-specific corporation tax rates.

Reducing taxes in Tunisia can have an effect on GDP, employment and tax revenues:¹⁴

- Eliminating the industry fee on all mobile services and sales relative to the base case could increase GDP by \$314 million and tax revenues by \$3 million by 2020 and create 3,700 jobs cumulatively between 2016 and 2020.
- Eliminating VAT and the industry fee on international incoming calls relative to the base case could increase GDP by \$88 million and tax revenues by \$3 million by 2020, and create 600 jobs cumulatively between 2016 and 2020.
- Eliminating the industry fee on national interconnection service calls relative to the base case could increase GDP by \$14 million and tax revenues by \$0.5 million by 2020, and create 100 jobs cumulatively between 2016 and 2020.

Most recently, in September 2016, **Egypt** agreed to a package of structural reforms that includes replacing the country's sales tax with VAT. This follows a loan of \$12 billion from the IMF in an attempt to fix Egypt's ailing economy. For mobile services, the new VAT is 13% general tax on top of 8% special tax to make a total of 21% (to increase to 22% after one year), replacing the 15% previous sales tax on mobile. This effectively increases the prices of mobile services to end users in Egypt by around 6%.

Addressing the affordability barrier requires the creation of policy frameworks that reduce sector-specific tax and fees on mobile to align them with those that apply to other standard goods and services. This has the potential to stimulate

investment in extending connectivity, especially in rural areas; increase mobile service adoption; deliver economic growth; and increase government tax revenues in the medium term.

Source: Digital inclusion and mobile sector taxation in Jordan, GSMA/Deloitte, May 2015
 Source: Digital inclusion and mobile sector taxation in Tunisia, GSMA/Deloitte, April 2016

3.3 Mobile's role in financial inclusion

In MENA just over 60% of the population are financially excluded,¹⁵ a higher proportion than all regions expect for Sub-Saharan Africa where two-thirds of the population are unbanked. Aside from Iran, in all developing countries in the region more than half of the population are excluded from financial services.

Mobile money services were first launched in the region in Somalia in 2009, and there are now 20 live services in 10 markets. In 2016, mobile money was introduced in two new markets: Iraq and Jordan.

- Zain Cash was launched in Iraq in February 2016 by Iraq Wallet, an authorised company from the Central Bank of Iraq (CBI). Through Zain Cash, customers can have a mobile money account linked to their SIM card, enabling them to make financial transactions easily and at any time. This is the second mobile money service to be launched in Iraq, following the introduction of AsiaHawala by Asiacell (Ooredoo) in January 2016 (also licenced by the CBI).
- At the beginning of 2016, Jordan became the first country in MENA to implement interoperability of mobile money services after the successful launches of Mahfazti in January, a mobile money service offered by a consortium of banks and

operators called Al Hulool, and of Zain Cash in March. Both services are connected to JoMoPay, a central switch owned by the Central Bank of Jordan which enables cross-network transfers between the services as well as interoperability with the country's broader payment infrastructure. These launches happened after the publication of the new regulatory framework for mobile money in December 2013.

Mobile money is starting to reach scale in countries such as Egypt, where the regulator reported that there are more than 5 million mobile money accounts, double that of last year.¹⁶ However, driving customer usage remains a major issue across the region, with the exception of Somalia where the level of mobile money adoption is particularly strong. In fact, Somalia is one of the few countries in the world where more adults reported having a mobile money account (37%) than an account at a formal financial institution (8%).¹⁷ One reason for this is the effort made by mobile money services in Somalia in building an active subscriber base, for both customers and merchants: Telesom ZAAD for example reports a more than 70% active subscriber rate (compared to 26% on average across the region), and more than 35% of Telesom's subscriber base actively use the ZAAD service.¹⁸

15. Source: World Bank Global Findex

- Source: Central Bank of Egypt
 Source: World Bank Global Findex
- 18. Source: How Telesom ZAAD Brought Mobile Money to Somaliland, GSMA, July 2013

MOBILE MONEY IN MIDDLE EAST AND NORTH AFRICA



100% —	UNITED ARAB EMIRATES
80% —	SAUDI ARABIA
60% —	LEBANON / TURKEY
40% —	JORDAN
20% —	EGYPT / IRAQ

% OF ADULTS WITH FINANCIAL SERVICES



do not have access to formal financial services

REGISTERED ACCOUNTS GREW BY 11%





26% of the registered

accounts were active as of December 2015



Markets with live services have closed/merged



ENABLING REGULATION

IS CRUCIAL FOR MOBILE MONEY TO REACH ITS FULL POTENTIAL

Allowing both banks and non-banks to offer mobile money ensures a healthy ecosystem that meets the needs of the underserved. Mobile money regulation has seen changes in several markets in MENA, encouraging growth in mobile money services.

- After Morocco in March 2015, Tunisia voted for a new banking law in June 2016 that provides the foundations for establishing an enabling regulatory framework for mobile money.
 Specifically, these new banking laws introduce a new category of financial institution, the payment service companies, opening up of the provision of mobile money services to non-banks. The new laws also provide a more flexible framework around the distribution of mobile money through agents.
- In Egypt the regulator has also introduced inbound international remittances through mobile money services allowing mobile money users to receive international transfers directly into their mobile money account.

These recent regulatory developments happen in the context of the growing interest from regulators in financial inclusion in the region. In April 2016, the Council of Arab Central Banks Governors decided to adopt an Arab Day of Financial Inclusion, demonstrating the commitment from financial sector regulators to accelerate financial inclusion in the region.

Microfinance institutions leveraging mobile money in Tunisia

Around the world, microfinance institutions (MFIs) are starting to use mobile technologies to improve operational efficiency and expand their customer base. MFIs can act as agents for existing mobile money providers, work with mobile operators to build innovative credit-scoring models using operator data, or use mobile money to digitise loan disbursement and repayment.

In Tunisia, two of the five microfinance providers, ENDA – the incumbent leader – and Taysir, have been leveraging mobile money to provide their microfinance services more efficiently to customers. In September 2015, ENDA started work on a pilot with Ooredoo and La Poste to digitise loan disbursement and repayment through Mobiflouss. Taysir launched in 2014 with a cashless service, where all transactions are conducted through mobile money. This allows customers to view their balance and make repayments 24×7, while helping Taysir to save on infrastructure costs. Ooredoo partnered with both MFIs, allowing the operator to deepen its reach, particularly in rural areas.¹⁹

19. Source: How can MFIs leverage mobile financial services? The example of Tunisia, GSMA, December 2015

3.4 Mobile playing a key role in disaster response

In 2015, over 65 million people across the world were displaced, either as refugees, asylum seekers or internally displaced people.²⁰ Around one fifth of these (just under 12 million people) were from Syria, and half of the top 10 countries for displaced populations are in the MENA region. These same

five countries - Iraq, Somalia, Sudan, Syria and Yemen - are also among the top 12 most vulnerable countries in the world according to the INFORM risk index, which measures how vulnerable a country is to humanitarian crises and disasters that could overwhelm national response capacity.²¹

Figure 24

Millions

Top 10 countries for displaced populations, 2015

11.7 7.3 4.9 41 3.9 2.6 2.6 2.4 2.3 2.2 Syria Afghanistan Sudan DRC Colombia Iraq South Yemen Nigeria Somalia Sudan



MENA

Source: UNHCR
 The INFORM index comprises three dimensions: hazards and exposure, vulnerability and lack of coping capacity

Years of repeated rounds of conflict, underdevelopment, and an absence of state authority and rule of law in many countries in the region have fuelled displacement, widespread poverty, high levels of food insecurity and a general lack of basic services, in turn fuelling further displacement. In addition, access restrictions and cumbersome procedures imposed by authorities on humanitarian agencies have hampered their monitoring of the displaced populations in terms of statistics and movements. This has led to inconsistent, unreliable and patchy information and contributed to an underestimation of the level of response needed.

Mobile technology can play an important role in the event of a humanitarian or a natural disaster, enabling critical communication between humanitarian agencies, affected populations and the international community. The mobile industry is improving network preparedness and restoration, and providing more effective, coordinated support to humanitarian responders and disaster-affected populations.

For example, Zain is implementing a variety of initiatives that target the plight of refugees and the displaced residing in its markets. Included in this are several commercial packages that are intended to facilitate connectivity, since this is recognised as a major deficit as well as an enabler for improved conditions. Most notable of these packages is the Tawasol Line offered by Touch in Lebanon, which offers discounted rates for Syrian refugees for voice, SMS and data, as well as discounts for calls and messages to Syria. In Jordan, the Syria-SIM service was developed through collaboration between Zain Jordan and the UNHCR (United Nations High Commissioner for Refugees), providing unlimited minutes between refugees and the UNHCR in order to support greater coordination between the two parties and enable refugees to access essential information.

Similarly, Souktel is working on mobile supplychain management in refugee camps in Jordan and surrounding areas where crisis-affected Syrians have fled, streamlining aid distribution to refugees. This includes mobile inventory management tools that record incoming and outgoing shipments, and smartphone applications to track packages via satellite and report back on their status and GPS coordinates in real time. The end result is a faster, more efficient aid supply chain.

Elsewhere, in Iraq, Asiacell runs a major humanitarian project to support internally displaced people (IDPs) and refugees with a series of charity initiatives designed to improve living conditions and support clear lines of communication. This includes:

- a donation of \$40,000 to provide clothes and other needs for Arbat Camp children who have been displaced, and to help maintain communication within the conflict zones
- distribution of 10,000 free SIM cards equipped with a free SMS notification service that will alert customers with vital information tailored for IDPs and refugees
- establishment of a call centre for IDPs and refugees in Sulaymaniyah, aiming to offer information about – and connect people with – the dedicated organisations and programmes that provide them with help and support
- distribution of handsets to refugee camp representatives, equipped with mobile data and 1,000 free minutes per handset for three months. These can be used for coordination across the camps by the representatives and will enable families to contact each other across war zones, without having to worry about the cost.

In recognition of the role mobile can play in disaster response, the GSMA launched the Humanitarian Connectivity Charter in March 2015. The Charter has been formed from a set of principles that focus on enhancing coordination, scaling and standardising responses and strengthening partnerships. The ultimate aim of the Charter is to strengthen access to communication and information to reduce loss of life and positively contribute to humanitarian assistance.

3.5 Addressing social challenges and realising the UN Sustainable Development Goals

Countries across the developing world face a range of socioeconomic challenges that need to be addressed to engender inclusive growth and sustainable development. A large proportion of the population in some countries, particularly in rural areas, lack access to many essential services, including health, education and financial services. These issues are further compounded by rapid population growth, with the potential for high youth unemployment in the future, food shortages and lack of access to basic energy and utilities.

In September 2015, the UN introduced its Sustainable Development Goals (SDGs) to the world — a 17-point plan to end poverty, combat climate change and fight injustice and inequality by 2030. Mobile connectivity is essential to the achievement of the SDGs: globally, the industry has already connected 4.7 billion people, enabling greater inclusion in cities and remote villages, transforming communities, delivering healthcare in ways never imagined, opening doors to education, employment and income opportunities, creating smarter cities, empowering people with the tools they need to thrive, and driving a more sustainable planet.

The GSMA and mobile operators are united in support for helping achieve the SDGs in MENA, leveraging the power of mobile networks to accelerate this journey in a way that no other technology can. Across the region, mobile is already playing a key role in tackling various social and economic challenges around poverty eradication, agriculture, health, education, gender equality, water resource management and sanitation, affordable energy access, employment, infrastructure, inequality reduction, safer cities and climate change.



HEALTH Ensure healthy lives and promote wellbeing for all at all ages.

Mobile is having a profound impact on the healthcare industry. With more than 1,200 initiatives deployed to date, mobile health initiatives are delivering health services to people and places previously unreached, providing healthcare to those who need it most.

CASE STUDIES

mHealth, UAE

The UAE has seen a significant rise in diabetes among its population. In 2014 the International Diabetes Federation (IDF) reported that 19% of the UAE population had diabetes, the 16th highest proportion in the world, costing the UAE government an average of \$1,967 per annum to treat a patient with the condition. Following work by the GSMA an MOU was signed in 2014 by the UAE government, Etisalat and Du to implement an interoperable mobile health ecosystem into the national health strategy.

Du has partnered with UNICEF to launch an interactive health education platform for schoolchildren. Etisalat has launched a similar programme in conjunction the UAE National Diabetes Task Force.

For its contribution, the GSMA was awarded 'Most innovative New Service of the Year' by CommsMEA in December 2014.



EDUCATION

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Mobile operators are working to support students and teachers integrate mobile technologies into the classroom. Mobile also enables access to greater learning opportunities for youth in urban hubs and remote locations.

FEMALE EMPOWERMENT

Achieve gender equality and

200 million fewer women

phones in low- and middle-

industry is working to close

this gender gap and deliver

socioeconomic benefits to

women, such as increased

access to financial, health, education and employment

services.

income countries. The mobile

than men own mobile

empower all women and girls.

CASE STUDIES

Najja7ni, Tunisia

In Tunisia, where 30% of people below the age of 30 are unemployed, the Najja7ni m-learning initiative has helped more than 1 million marginalised young people improve their education, employability and financial inclusion.

The initiative was launched in 2010 with an education service for primary and secondary school children, evolving into an m-English service in 2011 and the employment service in 2013 focused on helping young job seekers and entrepreneurs succeed in the job market. Najja7ni Education offers children from remote areas and disadvantaged children in urban areas the chance to learn mathematics, sciences, Arabic, French and English. The approach works through popular subject areas such as travel, technology and the environment and uses around 2,500 interactive questions and answers.



CASE STUDIES

Souktel, Palestine West Bank

Souktel uses SMS to help Palestinian women take a more active role in their communities through a new programme funded by Middle East Partnership Initiative (MEPI). The Resalti services include an SMS polling solution, a peer-to-peer messaging service and text-in radio feedback solution. Souktel partners with local NGOs to provide a customised and integrated solution for the NGO's specific goals. For instance one NGO runs SMS chat sessions on domestic violence through a secure peer networking app. Another has partnered with Nisaa FM, a local radio station focussed on women's issues, and is able to display messages in real time on studio screens.



EMPLOYMENT

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

The mobile industry creates jobs directly and indirectly through accelerating economic growth and enabling innovation. The internet is the most important enabler of social development and economic growth of our time. Mobile connectivity is the primary method for connecting to the internet today and is a key driver of innovation.

SMART CITIES Make cities and human

settlements inclusive, safe,

resilient and sustainable.

provides mission-critical

communications for key

Mobile network operators

connectivity in the face of

natural disasters, conflict

and war. Networks can be used to increase resilience to disasters through early warning systems, SIM-enabled monitoring and big data analytics. Connectivity is also a key ingredient for innovation in reducing communities' environmental footprint.

services in every community.

The mobile industry

provide life-saving

CASE STUDIES

JobMatch, Palestinian West Bank

According to the UN, nearly 20% of young Palestinians are neither in the labour force nor in formal education.

Souktel partnered with the World Bank and the Palestinian Ministry of Education to launch a mobile JobMatch service on four Palestinian college campuses. JobMatch became the universities' first-ever job search service.

After 12 months of use by 400 new college graduates, more than 25% of users had found work/internships through Souktel (compared with a 15% success rate at traditional recruitment firms), and over 60% of employers using the service had cut hiring time and costs by over 50%.

Since the initial pilot, JobMatch has grown into a nationwide service, with more than 10,000 daily users across the West Bank.



CASE STUDIES

Smart Dubai, UAE

To realise the goals of Dubai Plan 2021, Dubai has launched its smart city strategy. Mobile is central to this. Sheikh Mohammed bin Rashid Al Maktoum said that 'our goal is for the entire city's services and facilities to be available on smartphones. We want to provide a better quality of life for all.' To achieve this, mobile operators in the UAE have rolled out a series of initiatives: in October 2014 Du announced plans to set up 5,000 Wi-Fi hotspots at 100 separate locations in Dubai and Abu Dhabi; in October 2015 Etisalat partnered with RTA to launch virtual malls at key metro stations; and in March 2016 Etisalat and Du made a joint announcement that another 50 pilot projects had been planned to help further the Smart Dubai goal.

Governing dynamic digital markets

Digital technologies and services are transforming the lives of people throughout MENA. They are fuelling economic growth, making businesses more efficient and effective, and helping policymakers pursue their objectives. Mobile connectivity is at the heart of this new digital era.

To enable the digital economy to develop further, governments across this diverse region need to ensure that all their citizens can access highquality connectivity whether they are at home, at work or on the move. Information, communication and entertainment need to be accessible everywhere. The ultimate goal for policymakers has to be the ubiquitous availability and adoption of broadband.

To achieve that objective, governments need to recognise that the digital landscape is now very different to how it was 20 years ago. Historically, policymakers have put mobile operators under the regulatory spotlight. This is now less of a concern as these operators face intensifying competition from companies in adjacent sectors. The ongoing changes in the digital marketplace have major ramifications for regulation, spectrum allocation and taxation: the policies governing the digital economy need to reflect the fact that a diverse group of players, using a wide range of technologies and business models, now use mobile networks (and the underlying spectrum) to deliver services to consumers and businesses.

It is no longer appropriate to think of mobile as a distinct industry or a special case. The rapid evolution of technology and business models, together with the growing importance of economies of scale and scope, has blurred the boundaries between mobile and service providers from other sectors of the economy. Mobile operators are now part of a broad, complex and dynamic digital ecosystem, with leading Internet platforms occupying key positions in the digital value chain. Both consumers and businesses find themselves grappling with inconsistent and overlapping regulation developed in a different era.

To shore up the case for fresh investment in mobile broadband networks in MENA, governments need to review and refresh their regulations, taxation policies and spectrum rules. In doing so, policymakers across the region will usher in an exciting new phase in the digital era characterised by increased investment, innovation and competition. Consumers, companies and governments would all benefit.

4.1 The case for regulatory modernisation

4.1.1 Apply consistent rules for equivalent services

Rules that apply to some digital service providers, but not to others, can distort competition, deter innovation and ultimately deprive consumers and companies of the benefits of technological progress. A clear example of this is the stark differences in the respective regulatory regimes governing mobile operators, media companies and Internet players. Whereas mobile operators and media companies generally have to follow rigid industryspecific rules, internet players are typically subject to general antitrust and consumer protection regimes. In particular, regulation of conventional communications services and service providers is far more intrusive and prescriptive than the regulation governing equivalent services delivered via the internet.

In many markets, mobile operators have to comply with stringent restrictions on what they can and cannot do with personal data that don't apply to internet-based services. For consumers, this situation is confusing – competition is distorted and investment deterred. Sector-specific rules may deter mobile operators from entering markets that require the management of large volumes of personal data, such as cloud services, thus protecting incumbents from competition. A lack of clarity can also be a roadblock.

In countries that have general data privacy laws, such as Morocco, Qatar, Israel and Turkey, both conventional mobile operators and providers of equivalent services have to comply with the same data privacy rules. Where there is a need for further restrictions in order to preserve the confidentiality of communications, these rules should apply to all equivalent services, otherwise the privacy interests of individuals will be prejudiced when they switch to an alternative provider. In countries where there are no general data privacy laws, such as Egypt or Algeria, individuals would lose such additional protection if they adopt an internet-based communications service.

Ideally, governments should ensure all equivalent services are governed by the same rules both to protect privacy and maintain security.

4.1.2 Take a less prescriptive approach

Another challenge for policymakers is to reduce the current over-reliance on highly prescriptive regulation that tries to anticipate what will happen, rather than relying on competitive forces to deliver the best outcome. Rigid rules based on historic patterns of behaviour are counterproductive in an economy that is changing rapidly. They can quickly become obsolete or obstructive, holding back innovation and investment. This kind of ex-ante regulation has traditionally been used to govern mobile companies on the basis that their markets were fairly static and the barriers to entry were high. But this approach is less and less appropriate given that mobile operators face increasing competition from internet-based services, as well as from other forms of infrastructure. In fastchanging markets, rigid sector-specific regulations can create market distortions, damaging the case for investment in mobile networks.

4.1.3 Optimise competition laws

Policymakers also need to be alert to the fact that the weakest player in a market may not be able to build a strong enough business case to enhance the coverage and capabilities of its networks. In such cases, the spectrum this player holds will be partially wasted, and consumers and businesses will suffer as a result. Here, market consolidation can be a good thing: regulators need to be careful to ensure that competition rules and/or regulatory caps on how much spectrum one player can hold don't act as a deterrent to network investment.

4.2 Addressing other obstacles and bottlenecks

4.2.1 Timely release of spectrum

Policymakers need to consider whether spectrum policy may be holding back investment in mobile infrastructure. It is important to recognise that spectrum is now a fundamental raw material for the economy. It is also a limited resource that needs to be managed in the most efficient way possible. To maximise economies of scale for operators and keep network deployment costs down, governments in MENA need to release internationally harmonised spectrum in a timely fashion. They also need to license spectrum in a way that encourages investment in new networks and services. Whereas spectrum sales have been used in some countries to plug short-term holes in the public finances, the release of spectrum should be part of a broader strategy to enable as many citizens as possible to access broadband and associated digital services.

4.2.2 Encourage investment in mobile broadband

Policymakers need to ensure that the mobile industry isn't burdened with excessive fees and taxes that could inhibit investment and growth. Taxation should be in line with that in other sectors. Digital technologies and services are now so pivotal to modern life that their cost should not be artificially inflated through sector-specific taxation. Broadband is not a luxury; it has become essential. Some governments in the region still impose counterproductive mobile-specific corporation taxes that significantly reduce the funds that operators have for investing in broadband capacity and coverage.

Figure 25

Corporation tax rates in MENA 2015



Source: GSMA/Deloitte

In essence, the growing importance of the digital economy means it should be governed in a strategic way that encourages investment and innovation. Regulatory frameworks, spectrum policies and taxation should all be assessed through a single lens: do they encourage investment or are they creating artificial obstacles and holding back the widespread availability of broadband services? With the right policy framework in place, governments can fuel investment, innovation and growth.

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4.3 Principles to underpin policy

There are a number of key principles that policymakers can follow to guide the reform of regulation, spectrum allocation and taxation.

4.3.1 A guide to regulatory reform

Some regulatory policies and institutions may need to be overhauled and replaced with a new regulatory framework that will apply consistently to all elements of the digital ecosystem, regardless of the technology or business model in use. The framework needs to be cost-effective and flexible, allowing markets and technologies to evolve while preserving and enhancing regulators' ability to achieve their objectives: The overarching objective is to enable citizens and companies to enjoy the benefits of technological progress, while still being protected by well-designed regulation.

Regulatory reform should be based on the following three specific principles:

- Regulation needs to be efficient and technologyagnostic. Regulation should achieve its objective in the most efficient way possible regardless of the technologies, industry structures or legacy regulatory regimes in place. Regulatory policies should also be implemented by institutions with the jurisdiction and expertise to consider all the alternatives.
- Regulation needs to be flexible to enable innovation. Regulation needs to foster both certainty and flexibility. Businesses need the scope to innovate with different technologies and business models, while investors need sufficient regulatory confidence to enable companies to take risks. To that end, a dynamic model focused on an assessment of the market's performance against a pre-defined set of objectives will be more effective than a prescriptive set of upfront rules.
- Regulatory reform should follow a bottom-up approach. Given the degree of change in the digital economy, regulation needs more than incremental reform. Entirely new approaches need to be considered, and – where appropriate – old ones jettisoned. Regulatory attention should be focused on areas where market power currently exists or is likely to exist in the future, rather than where it may have existed in the past.

4.3.2 Maximising the socioeconomic value of spectrum

To create value for citizens and companies, spectrum needs to be used as efficiently as possible. Frequencies that remain fallow cannot drive economic growth or enhance social welfare. To give investors the confidence to invest in networks, spectrum needs to be licensed in a way that is transparent, consistent and predictable. There also needs to be a reasonable prospect of a return on the investment in both the spectrum and building the associated networks. To harness the full potential of this natural resource, governments should adhere to the following principles when they license spectrum:

• Maximise the amount of available spectrum: allocate the available spectrum together, rather than artificially ration it.

- Avoid fragmentation of spectrum: ensure that LTE services can be delivered through a minimum channel size of 10 MHz.
- Allocate technology-neutral spectrum to those that value it most highly: carefully-designed multi-round auctions are typically the best award mechanism.
- Spectrum fees should not be so high as to risk distortions: reserve prices should be low but non-trivial, and usage fees should relate only to administrative costs of managing spectrum.
- Award long or indefinite licence terms with a presumption of renewal, ensuring any ongoing spectrum usage charges are predictable and clear.

4G needs sufficient spectrum

Egypt is one of the countries in the region preparing to license spectrum for 4G services. The mobile industry is working with the Egyptian authorities to try to ensure there will be sufficient spectrum available on terms that will encourage rapid and large-scale investments in 4G networks and services. Operators are looking for the Egyptian government to publish a clear spectrum roadmap to enable them to understand how and when sufficient spectrum will be made available.

The total amount of spectrum assigned to each operator for 4G needs to be in the range of 2x30 MHz to 2x60 MHz, across a range of coverage and capacity bands, with a minimum contiguous bandwidth of 2x10 MHz in each band to enable efficient network economics.

4.3.3 Refining fiscal policies

Mobile networks and services facilitate communication and the flow of information, increasing productivity throughout the economy. Governments should therefore encourage the use of mobile broadband. Clearly, the mobile sector should not be taxed in a similar way to products that governments want to discourage consumption of, such as alcohol, tobacco and gambling. In many countries in MENA, taxation policy needs to be revised in line with the following widely recognised principles of taxation:

- In general, taxation should be broad-based: mobile-specific taxes may lead to inefficiently low consumption and investment in the mobile sector.
- Taxes should account for sector and product externalities: taxing mobile in a disproportionate manner could be taken as a signal that the

government wishes to discourage rather than encourage consumption.

- The tax system should be simple, understandable and enforceable: uncertainty and lack of transparency over taxation systems may discourage investment and increase enforcement costs for the government.
- Incentives for competition and investment should be unaffected: higher taxes on a given industry compared to other sectors reduce the incentives for investment in the industry, both domestically and internationally and could reduce investment in infrastructure and quality-of-service improvements.
- Taxes should not be regressive: mobile-specific taxes increase barriers to access and hit the poorest consumers hardest.

4.4 Challenges specific to the region

Digital policymakers in parts of MENA face challenges that go beyond those faced in other regions. As some countries are either unstable or are seeking to recover from the aftermath of conflict, investors can be deterred by geopolitical risks. As a result, key infrastructure may be damaged or lacking, while public funds are in very short supply. This has created a number of challenges for the region's mobile industry that will need to be addressed if the countries in the region are going to realise the full benefits of digital technologies and services.

Broadband connectivity can play a key role in enabling an economy and society to recover from a geopolitical crisis or conflict. It can be used to disseminate information, enable communications and support commerce. But broadband depends on accessible and affordable infrastructure. For example, in Iraq, the use of mobile broadband services is being constrained by the cost of microwave and fibre links to the internet.²² These costs are artificially high as a result of regulation and lack of investment certainty. If Iraq were to allow mobile operators to invest directly in appropriate fiber infrastructure, the diversity of supply would increase, costs would fall (and thus make services more available to end users) and help bring about a more competitive ecosystem to accelerate fixed broadband rollouts. This would yield substantial socioeconomic benefits – in terms of GDP growth, employment and access to new services to support health, education and security in the country.

Iraq should allow mobile operators to invest directly in international gateway services, as this would rapidly improve Iraq's global connectivity and bring competition and fairer prices to international services. While existing licences do include the possibility to construct such facilities in certain circumstances, less onerous conditions and greater incentives from the relevant authorities in Iraq would ensure that the successes already achieved in the provision of mobile voice services through private investment are replicated in the mobile data and international internet connectivity markets.

Stimulating growth in the digital sector

Mobile broadband is crucial to the continuing development of the MENA region. As the primary infrastructure for the region's digital economy, mobile networks play a key role in delivering a wide range of services to both citizens and consumers. Policymakers need to support and encourage investment in this infrastructure.

To that end, there are a number of levers they can pull. They can modernise regulatory frameworks, allocate internationally harmonised spectrum on a timely and cost-effective basis and revise mobile-specific taxation to lower the cost of using mobile services for consumers. In this way, the region's governments can stimulate the development of a vibrant digital sector that drives broad socioeconomic progress.

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