The Mobile Economy

Middle East and North Africa 2017

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Executive Summary

Mobile adoption rising, but growth slowing

By mid-2017, there were 365 million unique subscribers across the Middle East and North Africa (MENA) region, accounting for 63% of the population. Global subscriber penetration overtook MENA during the course of 2015. As a result, MENA has fallen behind Asia Pacific to become the second least penetrated region in the world. There is, however, huge variation between countries in the region, from the advanced Gulf Cooperation Council (GCC) States where 76% of the population on average are mobile subscribers, to some of the other Arab States such as Comoros, Djibouti and Somalia where less than a third of the population subscribe to mobile services.

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. As a result, subscriber penetration will reach only 65% by 2020, below the global average of 72%.

Mobile broadband growing, with 5G coming soon

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 end of 2016, mobile broadband connections reached parity with 2G, and by the end of 2017 3G will become the dominant mobile technology. By 2020, mobile broadband will account for just under 70% of total connections.

Expansion of 3G coverage throughout the region is helping drive the uptake of mobile broadband services, but delays in service launches, slow rollout across most of North Africa, political instability and potential issues around affordability mean 4G will still only account for just over 20% of region-wide connections by 2020.

Looking further ahead, markets in MENA – particularly some of the GCC States – will be among the first countries globally to launch 5G networks, with commercial deployments planned in the UAE in 2019 and Qatar in 2020. In the early years following these launches, operators in 12 other countries across MENA are expected to deploy 5G services, covering around 30% of the region's population by 2025. By this time, regional 5G connections (excluding IoT) are forecast to surpass 50 million.

Revenue returning to growth

In 2015, the downward trend in revenue growth reversed, and increased further in 2016 largely driven by the growth of 4G services across the region. In the region as a whole, total revenue grew by 1.6% in 2016, compared to growth of 1% in 2015 and a decline of 2.5% in 2014.

Revenue is likely to grow as more countries roll out or expand 4G networks and mobile operators continue to monetise the strong growth in data traffic. However, growth will be modest due to further slowing of subscriber growth, ongoing political and socioeconomic instability, increasing competition and the cannibalisation of traditional revenues by IP messaging platforms. Overall, total revenue is expected to grow by 1.5% in 2017, and by an average annual growth rate of 1.9% between 2017 and 2020.

Mobile contributing to jobs and economic growth

In 2016, mobile technologies and services generated 4.2% of GDP in the MENA region, a contribution that amounted to $165 billion of economic value. In the period to 2020 we expect this to increase to almost $200 billion (4.3% 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 2016. This includes workers directly employed in the ecosystem and jobs that are 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 makes a substantial contribution to the funding of the public sector, with $20 billion raised in 2016 in the form of taxation.

Mobile driving engagement and innovation in the region

As smartphone adoption continues to rise in the region (just under half of total connections were smartphones by mid-2017) and as more users come online, an increasing range of mobile services are being consumed, including video, social media, e-commerce and financial services. The MENA region, particularly the developing markets, will undergo a large shift in consumer behaviour by 2030 as a combination of drivers take hold, including rising smartphone and mobile internet adoption, improved affordability and the regionalisation of online content.

Mobile has emerged as the platform of choice for creating, distributing and consuming innovative digital solutions and services in MENA, and the region is playing a leading role in certain areas. For example, some countries, particularly in the Gulf region (Saudi Arabia and the UAE, for example), are looking to address challenges around urbanisation, pollution and resource management by implementing smart city services, while others (such as Turkey) are spearheading initiatives to provide individuals and businesses with secure and robust access to online services via mobile-based solutions.

Mobile operators in the region are also increasingly collaborating with tech start-ups to help scale innovative and sustainable mobile services. By supporting these new and innovative digital players to secure the funding, resources and direction they require to bring their products and services to scale, mobile operators are helping to deliver the most impactful mobile solutions to those that need them most, and generating the greatest socioeconomic impact.

Mobile helping address social challenges

The large-scale societal adoption and use of digital technologies is a key driver of measurable economic, social and cultural value, including increased productivity, a rise in employment rates, improved security, and greater capacity to tackle social and environmental issues. Mobile internet penetration in MENA has doubled over the last six years, reaching just under 40% of the population by mid-2017.

Despite the steady progress, a vast digital divide remains in many parts of MENA, particularly in the developing countries: across the region, there are 350 million people without access to the mobile internet. As challenges around infrastructure, affordability, consumer readiness and content are addressed, an additional 67 million people are expected to gain access to the mobile internet across the region by the end of the decade, bringing the total to just under 300 million, or 48% of the population.

Given its reach of 5 billion people across the globe, mobile is also playing a key role in tackling various social and economic challenges as outlined by the UN's Sustainable Development Goals (SDGs), including poverty, education, employment and sanitation. Mobile technology provides access to tools and applications that help address these issues, and enables new technologies and innovations to build more efficient and environmentally sustainable societies.

Policies for a digitally advanced society

Telecoms markets across MENA have changed considerably over recent years, with the convergence of technologies and services and the emergence of internet players and the digital ecosystem. However, the policy framework has not kept pace with this movement to a data-focused economy and has left aspects of telecoms regulation obsolete. Devised for an industry that no longer operates in the same way, policy is disproportionately focused on mobile operators who face competition from adjacent sectors that are lightly regulated. This creates unnecessary market distortions and holds back an entire industry.

Policymakers should strive to set policies that foster competition and protect consumers, without impeding technological, social and economic progress. The focus should be on three key areas: the rules governing the use and storage of consumer data; licence duration and renewal; and the costs incurred by mobile operators (for example, licence fees, spectrum costs and sector-specific taxes). Tomorrow's technologies must not be stifled by yesterday's regulation. By updating the regulatory framework, policymakers can ensure that government and industry are aligned to create a growing digital society for everyone.

MOBILE ECONOMY MENA

Unique mobile subscribers

2016 **360 million** 63% PENETRATION RATE

2.6% CAGR 2016–20

2020 **399 million** 65%

SIM connections

2016 **639 million** 112% PENETRATION RATE*

2.7% CAGR 2016–20

2020 **712 million** 116%

*Excluding M2M

Accelerating moves to mobile broadband networks and smartphone adoption

Mobile broadband connections to increase from 50% of total in 2016 to

69%

by 2020

By 2020, there will be

463m

smartphones – growth of **167 million** from the end of 2016

Data growth driving revenues and operator investments

Operator total revenues

2016 **$69 billion**

1.8% CAGR 2016–20

2020 **$74 billion**

Operator CAPEX of up to **$50 billion** for the period 2017–20

Mobile contributing to economic and social development across the region

DIGITAL INCLUSION
Delivering digital inclusion to the still unconnected populations.

MOBILE INTERNET PENETRATION

38% 2016 — 2020 48%

FINANCIAL INCLUSION
Delivering financial inclusion to the unbanked populations. As of December 2016 there were

24 live mobile money services in 9 countries

INNOVATION
Delivering innovative new services and apps. Number of M2M connections to reach

31 million by 2020

Mobile industry contribution to GDP

2016 **$165bn** 4.2% GDP

2020 **$194bn** 4.3% GDP

Public funding

Mobile ecosystem contribution to public funding (before regulatory and spectrum fees)

2016 **$19.9bn**

2020 **$20.5bn**

Employment

Jobs directly supported by the mobile ecosystem

2016 **493,000**

2020 **543,000**

Plus an additional **630,000** indirect jobs supported in 2020

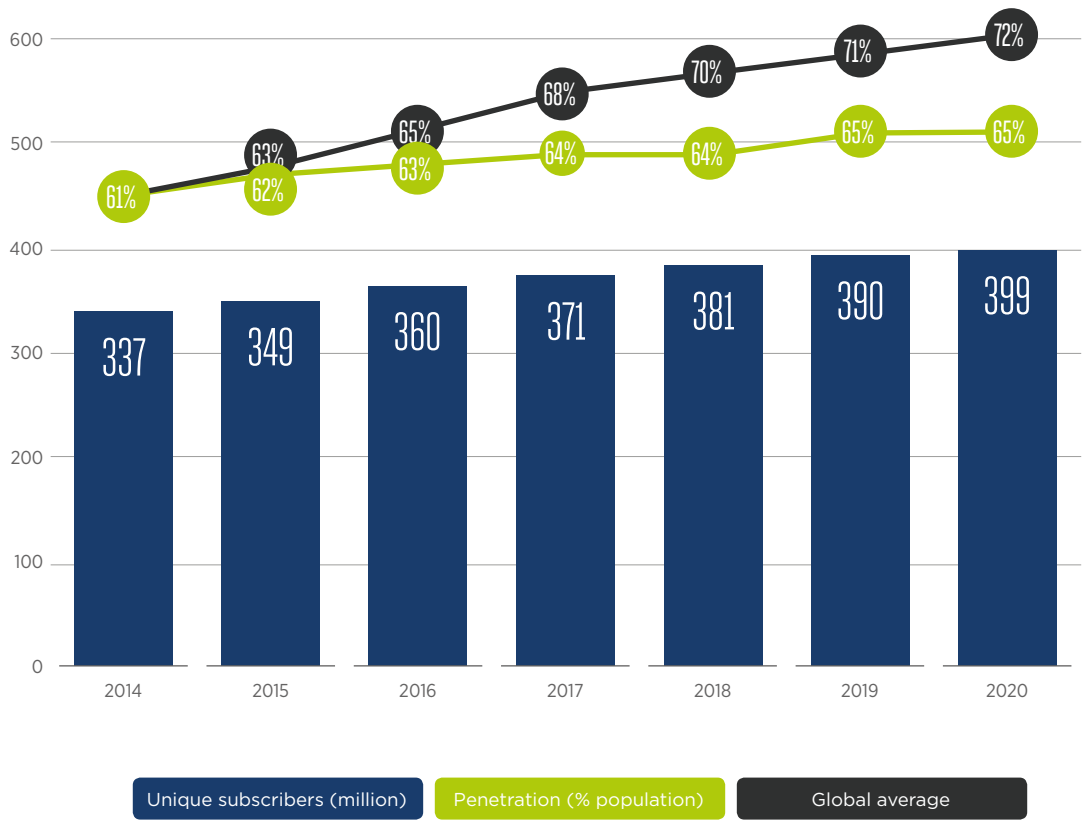
1 Industry overview

1.1
Overall growth slowing but diverging trends across region

By mid-2017, there were 365 million unique subscribers[1] across the MENA region, accounting for 63% of the population. Despite subscriber growth of 4% on average annually over the last four years, penetration growth continues to trail the global average. Global subscriber penetration overtook MENA during the course of 2015. As a result, MENA has fallen behind Asia Pacific to become the second least penetrated region in the world, ahead of Sub-Saharan Africa (43%) but behind the global average of 67%.

Figure 1 Source: GSMA Intelligence

Unique subscribers in MENA

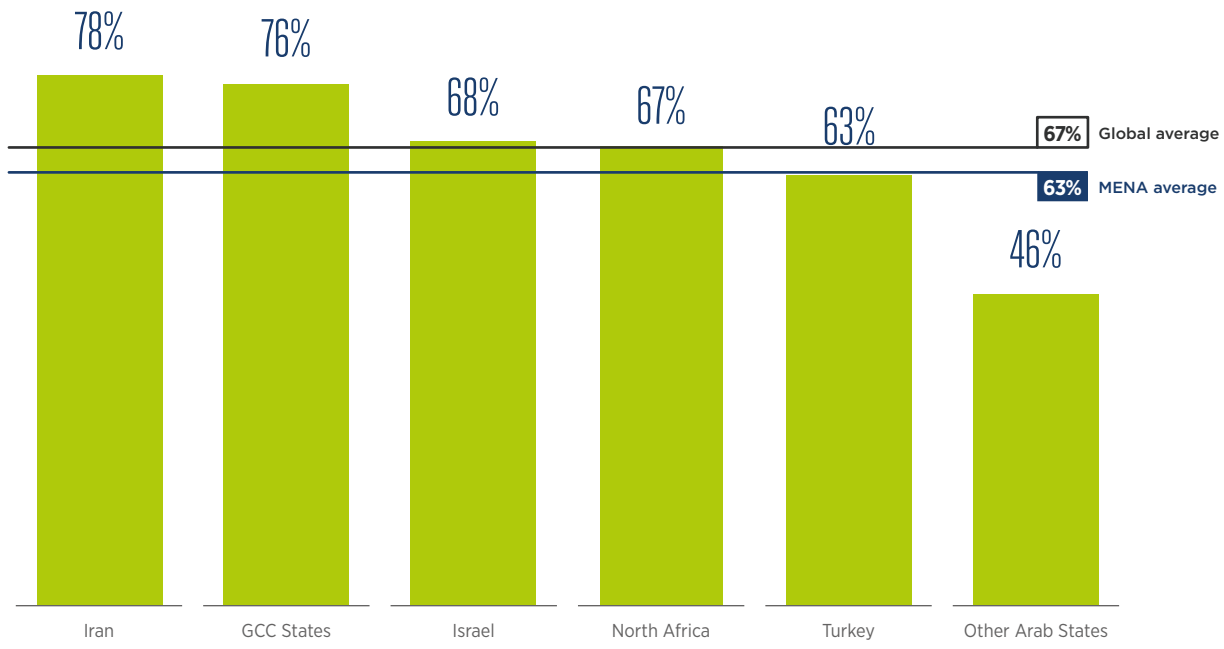


1. Unique users who have subscribed to mobile services at the end of the period, excluding M2M. Subscribers differ from connections such that a unique user can have multiple connections.

The regional penetration figure masks significant variations at the country level in terms of mobile market maturity. In the GCC States[2], 76% of the population on average are mobile subscribers, and three of these markets (Bahrain, Kuwait and the UAE) have a subscriber penetration rate of 90% or above, placing them among the most penetrated mobile countries in the world. By contrast, North Africa[3] has an average subscriber penetration rate of 67%, and across the Other Arab States[4], penetration stands at 46%. In fact, the latter sub-region is home to three markets where less than a third of the population subscribe to mobile services (Comoros, Djibouti and Somalia).

Figure 2 Source: GSMA Intelligence

MENA subscriber penetration by sub-region, Q2 2017

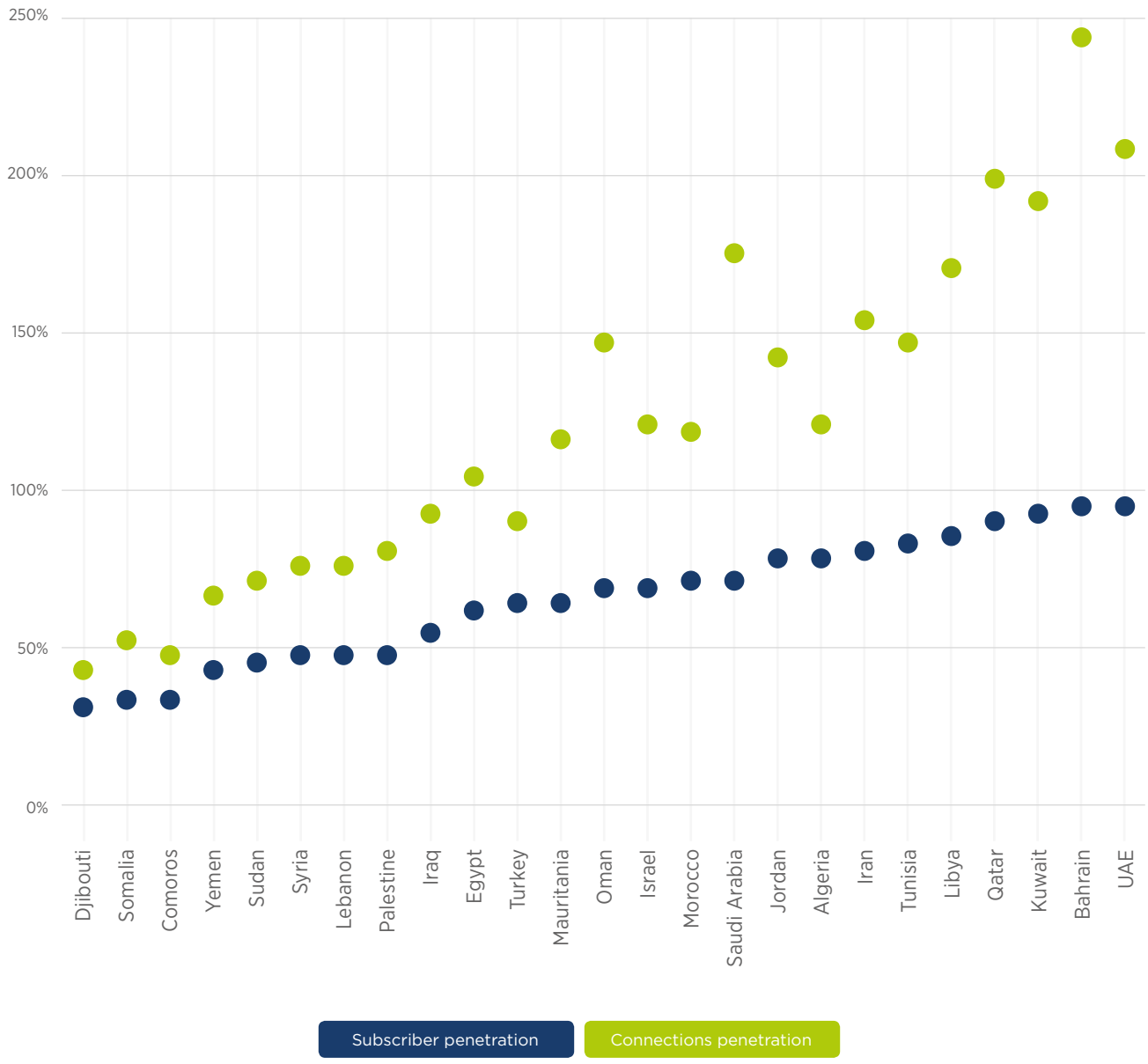


2. GCC States: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE
3. North Africa: Algeria, Egypt, Libya, Mauritania, Morocco and Tunisia
4. Other Arab States: Comoros, Djibouti, Iraq, Jordan, Lebanon, Palestine, Somalia, Sudan, Syria and Yemen

Although subscriber penetration is below the global average, multi-SIM ownership in many countries – particularly the GCC States – translates into a relatively high connections[5] penetration rate: 112% on average across MENA in Q2 2017, compared to 103% globally. In Bahrain and the UAE for example, the SIM ratio (SIMs per unique subscriber) stands at over two, leading to a connections penetration rate of more than 200%. However, other markets, such as Comoros, Djibouti and Somalia, have much lower SIM ratios of less than 1.4, resulting in a connections penetration rate close to or below 50%.

Figure 3 Source: GSMA Intelligence

MENA penetration by country, Q2 2017



5. 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 subscriber can have multiple connections.

One reason behind the relatively low levels of penetration on average in MENA is the high proportion of young people: just under a third of the region's population is under 14 years of age, which is the second highest proportion globally (behind Sub-Saharan Africa at 43% but ahead of Latin America and Asia Pacific at 25% and 24% respectively).[6] There are, however, additional factors that will cause subscriber growth to continue to slow over the next four years:

- 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 the Other Arab States and countries across North Africa)
- unstable political and economic conditions in some markets showing little signs of improvement (such as in Iraq, Libya, Somalia, Syria and Yemen).

With a CAGR of 2.6% between 2016 and 2020, the region will grow faster than developed regions such as Europe and North America, but slower than the global average of 3.5% and the developing world in general. The region will therefore fall further behind in terms of subscriber penetration, reaching 65% by the end of 2020, compared to a global average of 72%.

Three of the largest markets in the region – Iran, Egypt and Turkey – accounted for just under half of the regional subscribers in mid-2017. Those same three markets, with the addition of Iraq and Sudan, will contribute 65% of the additional 34 million people that will be connected by mobile services across the MENA region by 2020.

6. World Bank

1.2
Migration to mobile broadband continuing

4G growing and 5G coming soon

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 end of 2016, mobile broadband connections reached parity with 2G, and by the end of 2017 3G will become the dominant mobile technology.

Once again there is diversity across the region: in Israel and Kuwait, for example, mobile broadband connections accounted for 92% and 87% of total connections in Q2 2017 respectively, and will account for more than 95% by 2020. At the other end of the scale, only 8% of connections in Somalia were mobile broadband in Q2 2017, and Palestine has yet to launch 3G networks.

Palestine to finally get 3G...but when?

As of mid-2017, the only mobile services available in Palestine are based on 2G technology. This is despite an agreement reached in November 2015 between Israel and the Palestinian Ministry of Telecommunications and Information Technology (MTIT) to allow the operation of 3G infrastructure in the West Bank through the provision of 20 MHz of 3G frequencies, half of which is to be shared. The deal was touted as a major step forward for the Palestinian telecoms sector and an example of Israeli-Palestinian cooperation, which would inject hundreds of millions of dollars into the Palestinian economy, but it is yet to materialise.

Negotiations are ongoing but, aside from continuing political issues, challenges have arisen regarding the management of the 10 MHz of shared spectrum, particularly in bordering towns such as Kfar Saba (in Israel) and Qalqilya (in the West Bank) where overlap could cause problems.

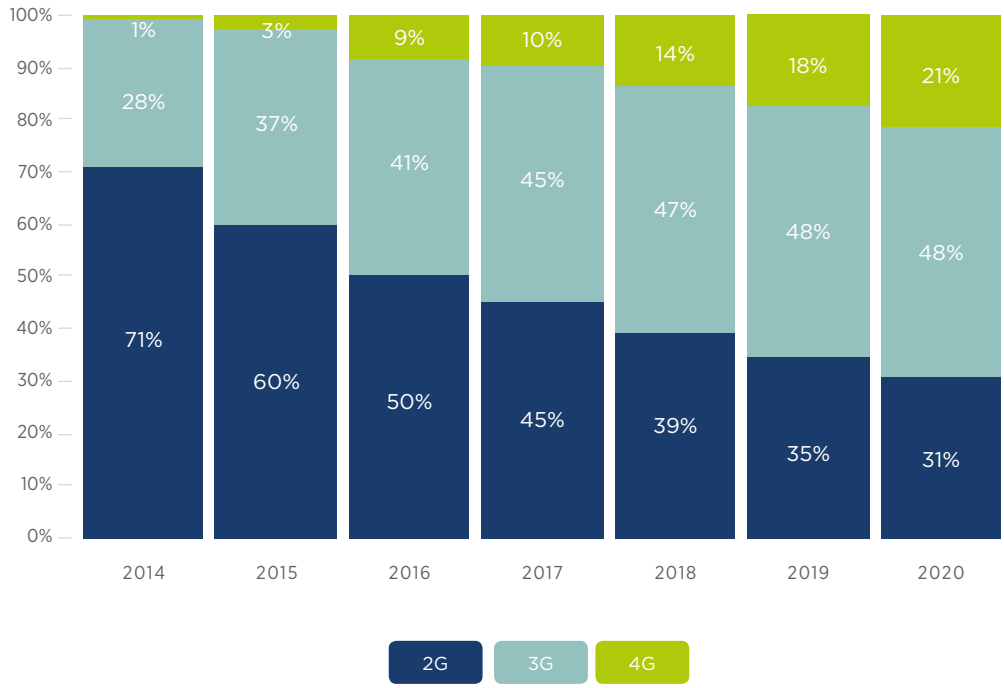
Growth in mobile broadband connections over the next five years will be relatively rapid, with a CAGR of 11.4% between 2016 and 2020, slightly higher than the global average of 11.2%. By 2020, mobile broadband will account for just under 70% of total connections.

Figure 4

Source: GSMA Intelligence

Technology migration in MENA

Percentage of connections



Expansion of 3G coverage throughout the region is helping drive the uptake of mobile broadband services: population coverage increased from around 60% in 2013 to just over 80% by Q2 2017. However, difficult geographic and socioeconomic conditions have limited coverage expansion in some countries, particularly the expansive, desert-dominated countries such as Sudan and Mauritania where 3G coverage remains below 50%.

The relatively slow uptake of 4G (8% of connections in Q2 2017 versus 28% 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 51 LTE networks have launched in 19 countries since, but there are still six countries (Djibouti, Egypt, Mauritania, Palestine, Syria and Yemen) without a 4G network, largely due to delays in spectrum allocation. However, Egypt will be launching nationwide 4G services imminently after mobile operators were finally awarded licences in October 2016, and Djibouti aims to roll out commercial LTE services in the next few years.

Delays in service launches, coupled with slow rollout across most of North Africa, political instability and potential issues around affordability mean 4G will still only account for just over 20% of region-wide connections by 2020, well below the global average of 44%. It should be noted that there may be a potential upturn to these forecasts as more networks are launched and if governments and mobile operators can overcome some of the barriers to future growth.

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 $16.1 billion in 2015 (24% of recurring revenues). Much of this was due to the 4G spectrum auction in Turkey in August 2015, which raised a total of $3.94 billion, with the country's three incumbent operators (Turkcell, Vodafone and Turk Telekom) securing licences across a range of frequencies, including in the 800 MHz band. There was a slight decline in 2016, despite the $1.1 billion spent on 4G licences in Egypt in 2016. With no other auctions planned in the region, capex will plateau from 2017 onwards, holding at around 17% of total revenue out to 2020.

Saudi Arabia first in MENA to auction 700 MHz spectrum

In July 2017, Saudi Arabia's first mobile spectrum auction resulted in the allocation of 700 MHz and 1800 MHz spectrum – the first time the 700 MHz band has been allocated in MENA – raising SAR5.8 billion ($1.6 billion). All three existing Saudi mobile operators (STC, Mobily and Zain), along with new entrant GO Telecom, participated in the auction; all four acquired 1800 MHz spectrum, while only STC and GO Telecom invested in the 700 MHz band.

The release of the new 700 MHz band (part of the second wave of Digital Dividend allocations) and an additional solid block of spectrum in the 1800 MHz band will contribute to deployment of high-speed mobile broadband services in the country as part of national transformation plans for 2020–2030. As of mid-2017, 4G connections reached 21% of total connections in Saudi Arabia – a figure forecast to increase to 41% by the end of 2020.

Figure 5 Source: GSMA Intelligence

Capex in MENA

Looking further ahead, markets in MENA, particularly some of the GCC States, will be among the first countries globally to launch commercial 5G networks. With high or rapidly growing levels of 4G adoption and data consumption, supportive governments and ambitious launch targets, operators in these countries are challenging North American counterparts such as Verizon and Asian operators KT, NTT DoCoMo and China Mobile in leading 5G development.

The following look set to host the first commercial 5G network deployments in the region:

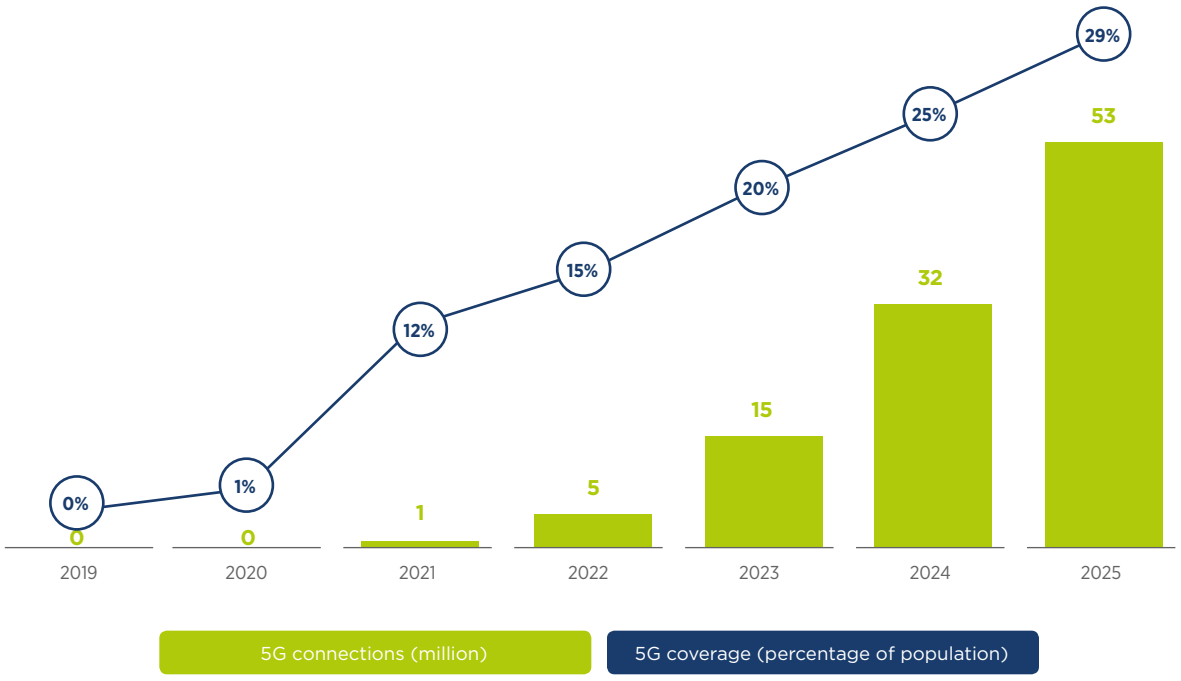
- UAE operator Etisalat conducted the first live 5G trial in May 2017, with plans to launch commercially in 2019. The trial, using 800 MHz of spectrum in the 15 GHz band, demonstrated 5G capabilities in a real-world environment over a live network, including tests on speed, latency and beam steering.
- In May 2017, Ooredoo announced it had added its 10th 5G base station in Qatar, and will continue to test important 5G equipment, software and spectrum requirements leading up to the standardisation of 5G technology towards the end of 2017. This will be followed by a commercial launch in 2020.

These early 5G networks will be based on 3GPP Release 15 and will be deployed in dense urban areas as mobile operators look to offer increased performance and supplement existing mobile broadband capacity. 5G's next phase, based on 3GPP Release 16, will bring further enhancements to mobile data, and the rest of the commercial requirements including massive IoT and critical communication services.

In the early years following the initial launches, operators in 12 other countries across MENA are expected to deploy 5G services. Rollout will likely be at a similar rate to the deployment of 4G, covering around 30% of the region's population by 2025. Adoption will scale rapidly, as device vendors see the technology as a means to differentiate handsets, while the fact that average selling prices (ASPs) for smartphones have declined since the launch of 4G means affordability will prove less of a barrier to ownership. 5G connections (excluding IoT) are anticipated to surpass 50 million in MENA by 2025.

Figure 6 Source: GSMA Intelligence

5G take-up in MENA



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 doubled in three years to reach 319 million in Q2 2017, accounting for just under 50% of total connections in the region. Although this is below the global average adoption rate of 53%, MENA will see the second fastest growth in smartphone adoption of any region, adding a further 144 million smartphone connections by 2020. This will bring smartphone adoption to 65%, broadly in line with the global average.

However, some markets exhibit particularly low levels of smartphone adoption: smartphones accounted for less than 25% of connections in Comoros, Somalia and Yemen in Q2 2017. These markets will, though, see rapid growth over the next few years: smartphone adoption will more than double by 2020 to reach 49%, 45% and 48% respectively. Declining device prices will drive much of this growth. Smartphone ASPs dropped to $165 in 2016 across MENA, down from $200 in 2014 and over $260 in 2012,[7] with more devices available in the sub-$100 range. Chinese manufacturer Xiaomi, for example, sells the Redmi Note in the UAE for AED299 ($81), and the Redmi 4A in Saudi Arabia for around SAR346 ($92).

7. Source: Strategy Analytics

As consumers migrate to mobile broadband and smartphone adoption grows, use of data services is also increasing. An increasing number of people across MENA are using IP messaging (see Section 2.2.1) and using their mobile phones to watch online video. Across the developed markets surveyed[8], between two thirds and three quarters of mobile phone owners claim to watch online video on their phones at least once per week. Even in the developing markets[9], between 44% and 60% claim to watch video at least once per month.[10]

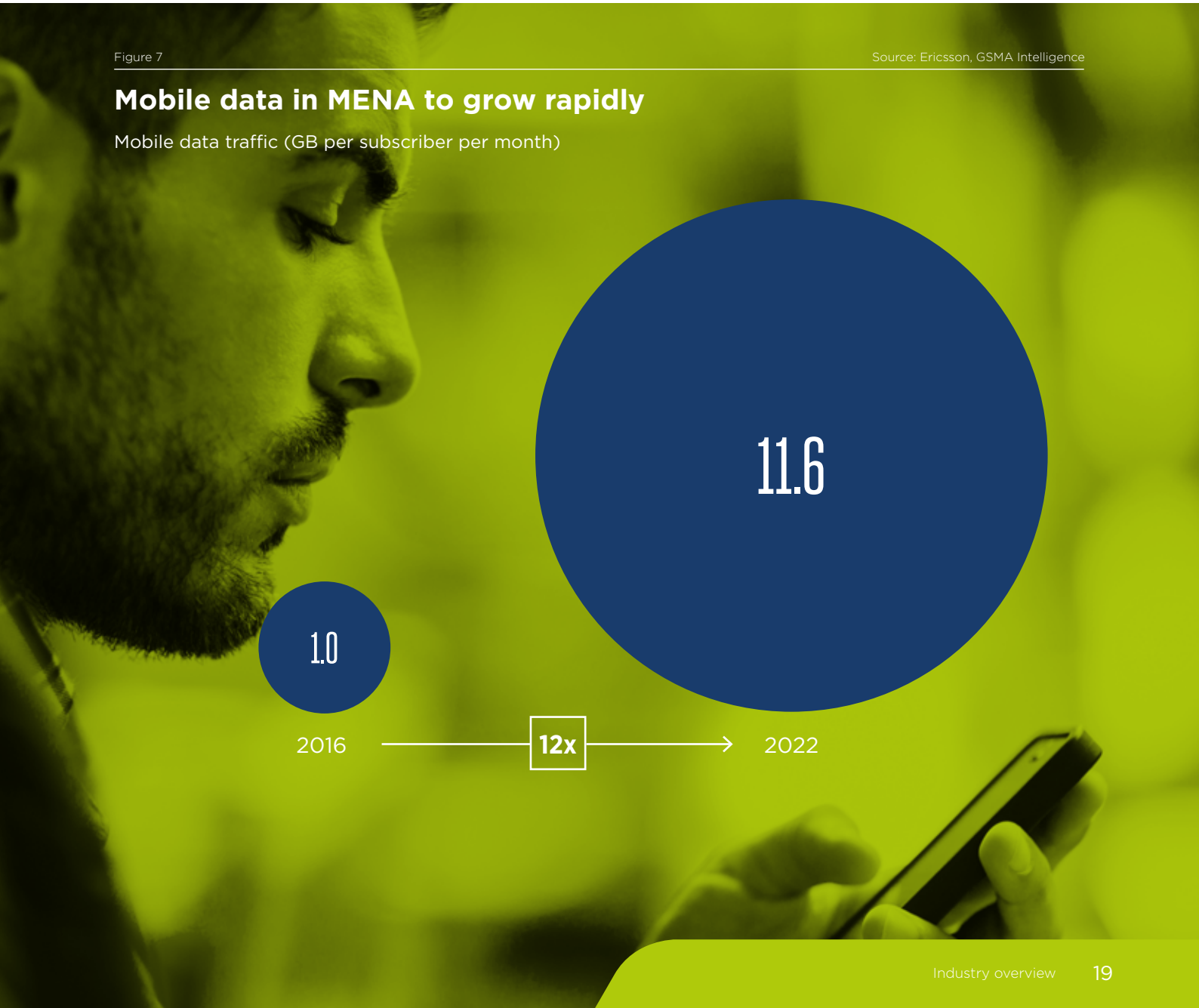
This use of additional services is driving strong growth in mobile data traffic across the region. Ericsson forecasts that mobile data traffic will grow 14-fold over the next six years in MENA, reaching 5.2 EB per month by 2022. This represents an average annual growth rate of 56%, higher than the global average of 42%. The amount of data used monthly by each unique subscriber will increase substantially from an average of 1 GB in 2016 to almost 12 GB in 2022.

8. Israel, Qatar and Saudi Arabia
9. Algeria, Egypt and Morocco
10. Source: GSMA Intelligence Consumer Survey 2016

Figure 7 Source: Ericsson, GSMA Intelligence

Mobile data in MENA to grow rapidly

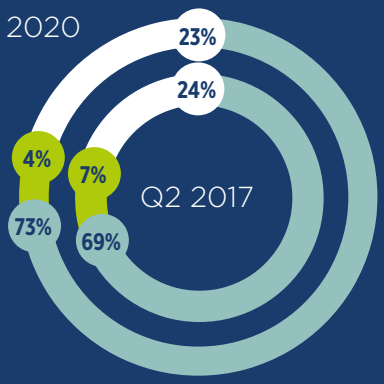
Mobile data traffic (GB per subscriber per month)



GCC States

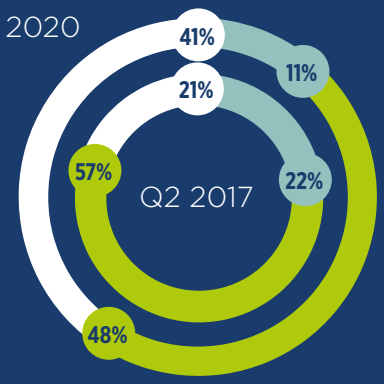
SUBSCRIBERS

Mobile internet Voice only Non-subscriber



TECHNOLOGY MIX

2G 3G 4G



SMARTPHONE ADOPTION

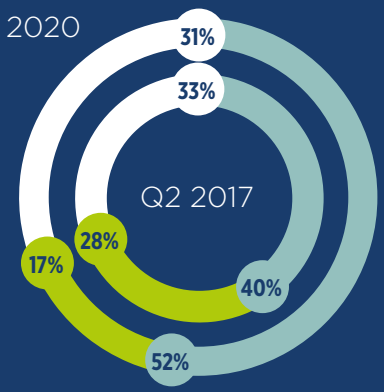
Q2 2017 **72%**

2020 **78%**

North Africa

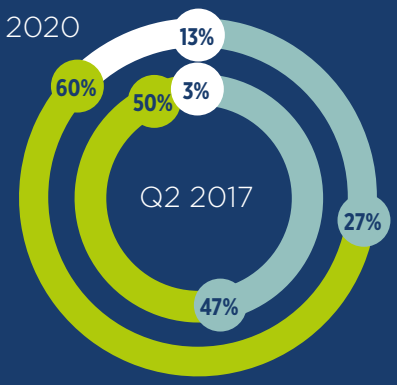
SUBSCRIBERS

Mobile internet Voice only Non-subscriber



TECHNOLOGY MIX

2G 3G 4G



SMARTPHONE ADOPTION

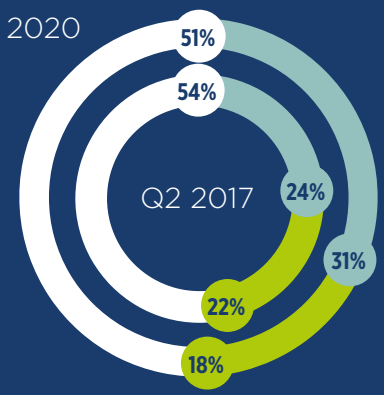
Q2 2017 **41%**

2020 **64%**

Other Arab States

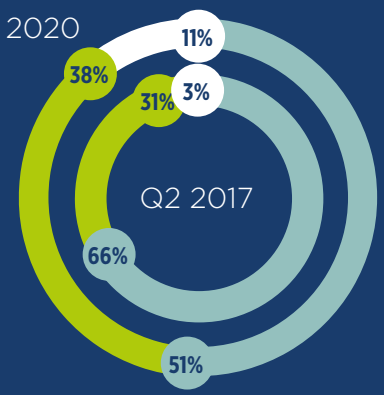
SUBSCRIBERS

Mobile internet Voice only Non-subscriber



TECHNOLOGY MIX

2G 3G 4G



SMARTPHONE ADOPTION

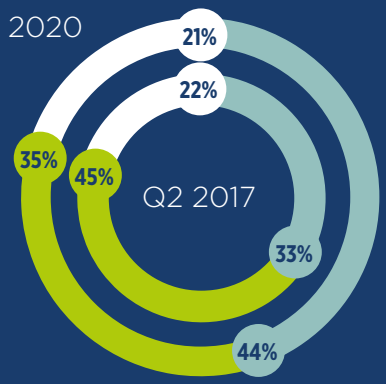
Q2 2017 **36%**

2020 **56%**

Iran

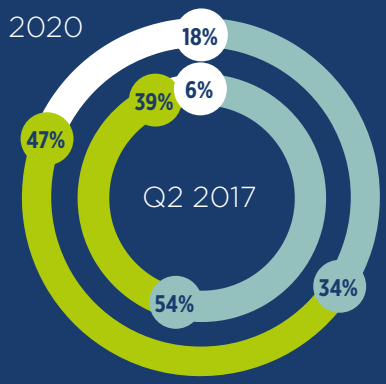
SUBSCRIBERS

Mobile internet Voice only Non-subscriber



TECHNOLOGY MIX

2G 3G 4G



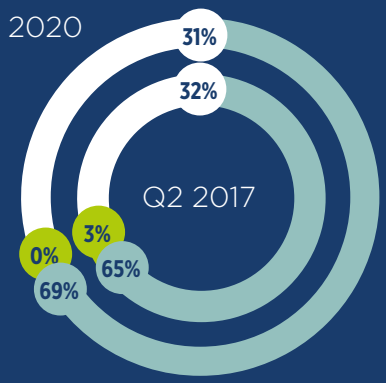
SMARTPHONE ADOPTION

Q2 2017	42%
2020	59%

Israel

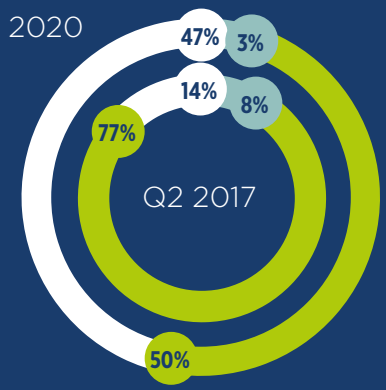
SUBSCRIBERS

Mobile internet Voice only Non-subscriber



TECHNOLOGY MIX

2G 3G 4G



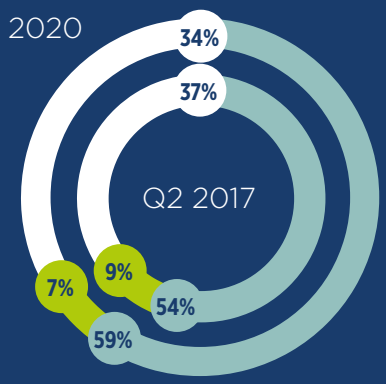
SMARTPHONE ADOPTION

Q2 2017	78%
2020	81%

Turkey

SUBSCRIBERS

Mobile internet Voice only Non-subscriber



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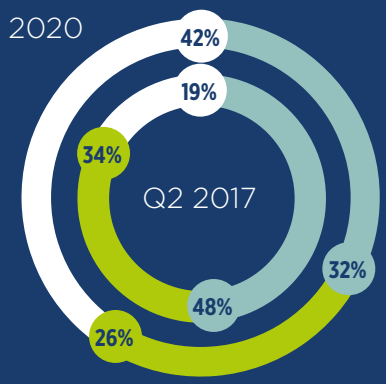


SMARTPHONE ADOPTION

Q2 2017	71%
2020	74%

1.4 Revenue returning to growth

2015 saw a return to revenue growth in MENA, reversing the downward trend brought on by slowing subscriber growth, increased competition and a general slowdown due to political, economic and social conditions. Revenues increased further in 2016, growing by 1.6% annually, largely driven by the rising uptake of 4G services across the region. For example, Vodafone Turkey and Turk Telekom reported that recurring revenue increased annually by 20% and 16% respectively following the launch of 4G services; and Irancell's recurring revenue grew by 22% over the same period due to expansion of its LTE network.

Looking forward, revenue is likely to grow as more countries roll out or expand 4G networks and mobile operators continue to monetise the strong growth in data traffic (for example, by offering a range of data bundles). However, the growth will be modest due to further slowing of subscriber growth, ongoing political and socioeconomic instability, increasing competition and the cannibalisation of traditional revenues by IP messaging platforms. With growth forecast at a CAGR of 1.8% per annum between 2016 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.

Figure 8

Source: GSMA Intelligence

Revenue trends in MENA

($ billion)

Helping to prop up total revenue in the region, data revenue is growing strongly: Djezzy Algeria and Vodafone Turkey reported 74% and 64% rises in data revenues respectively in 2016 following the launch of 4G services; and Irancell (MTN) data revenue grew by 69% annually in 2016 due to modernisation of existing 3G sites and expansion of its LTE network.

On average across the region, data revenues grew by 15% in 2016 to reach $19 billion and 28% of recurring revenues, up from 24% in 2015 and 13% in 2012. This proportion is considerably more for mobile operators in the more advanced markets; 70%, 55% and 52% in Q1 2017 for Turkcell, Ooredoo Oman and Zain Bahrain respectively (up from 29%, 49% and 38% in Q1 2016). By 2020, mobile data revenue will have grown by an annual average of 4.3% to $23 billion, accounting for 31% of recurring revenues.

2

Mobile contributing to growth, innovation and social development

2.1
Delivering growth and jobs

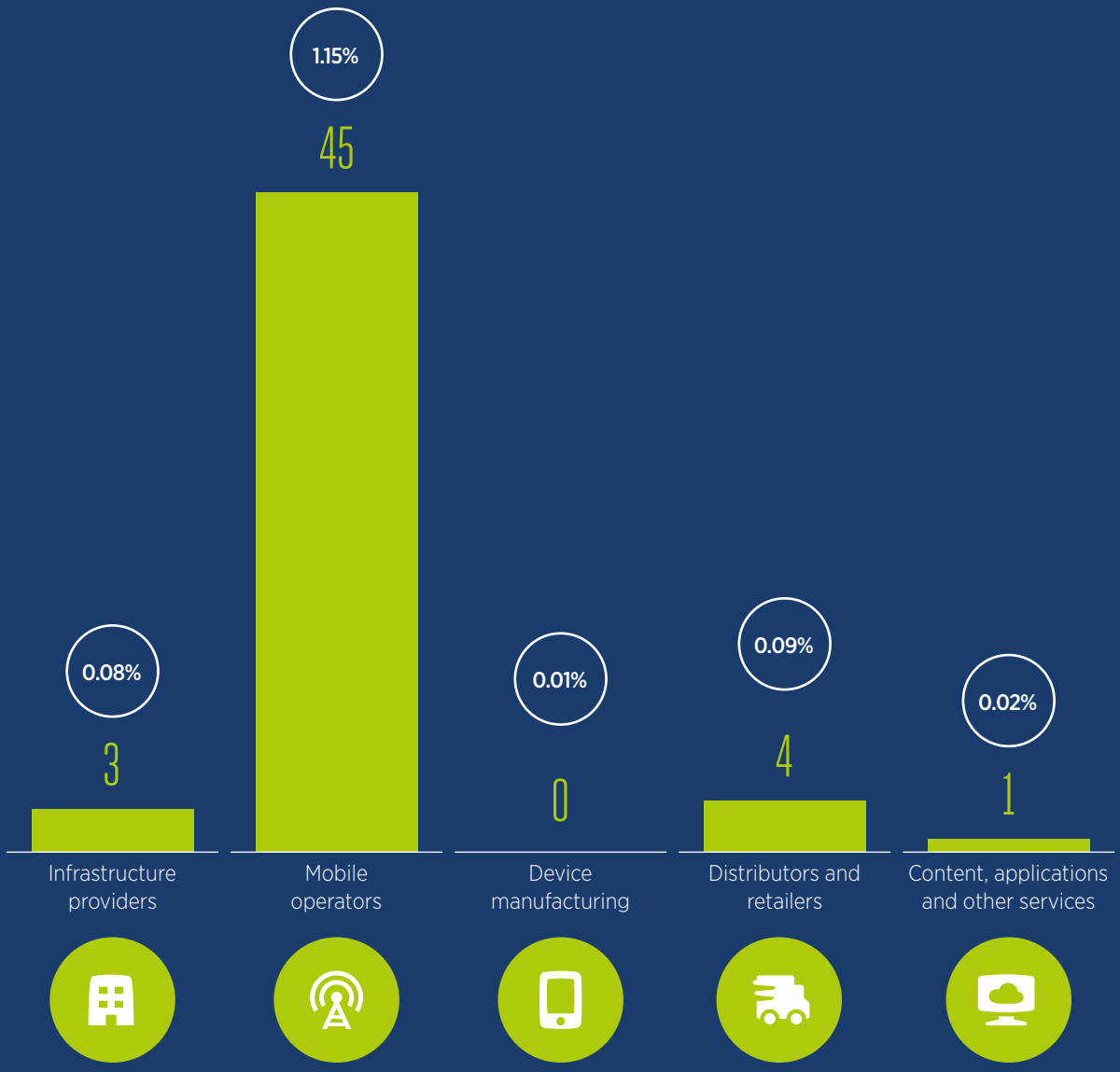
The mobile ecosystem consists of mobile network operators, infrastructure service providers, retailers and distributors of mobile products and services, handset manufacturers and mobile content, application and service providers. The direct economic contribution to GDP of these firms is estimated by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

In 2016, the total value added generated by the mobile ecosystem was around $53 billion (or 1.4% of GDP), with network operators accounting for the vast majority of this.

Figure 9 Source: GSMA Intelligence

Direct GDP contribution of the mobile ecosystem

($ billion, % 2016 GDP)



Note totals may not add up due to rounding.

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 2016, this additional economic activity generated a further $14 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, by reducing unproductive travel time). There is significant variation across MENA in mobile connections penetration, ranging from less than 70% in Yemen and Sudan to almost 200% 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, by 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 2016 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.

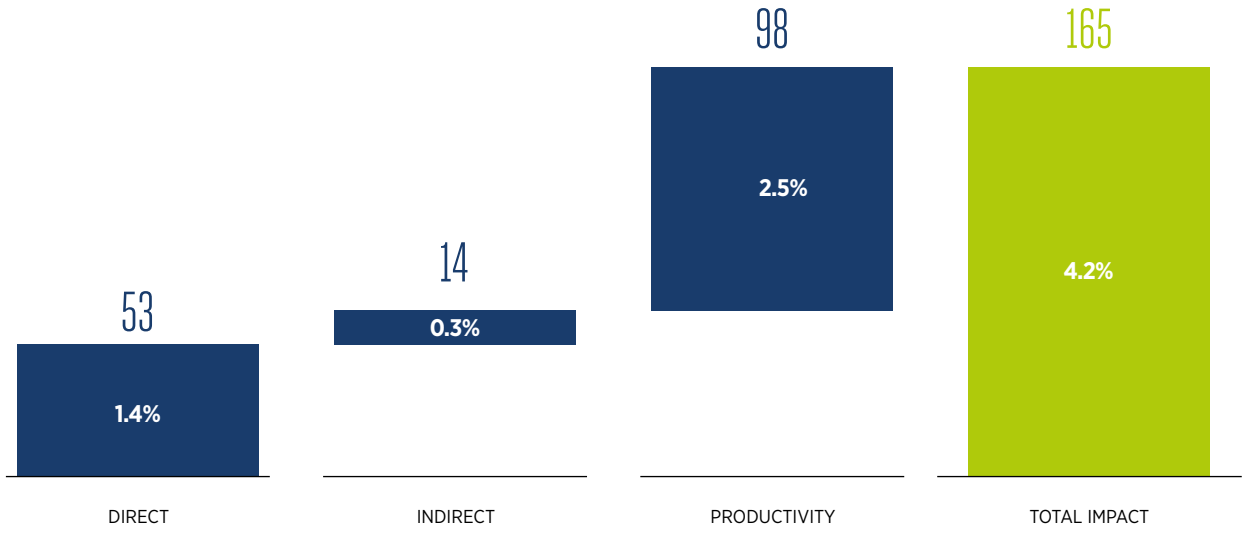
We estimate these productivity impacts were worth around $98 billion in 2016 (or 2.5% of GDP).

Overall, taking into account the direct, indirect and productivity impacts, in 2016 the mobile industry made a total contribution of $165 billion to MENA economies in value added terms, equivalent to 4.2% of the region's total GDP.

Figure 10 Source: GSMA Intelligence

Total (direct, indirect and productivity) contribution to GDP

($ billion, % 2016 GDP)



Note totals may not add up due to rounding.

Employment

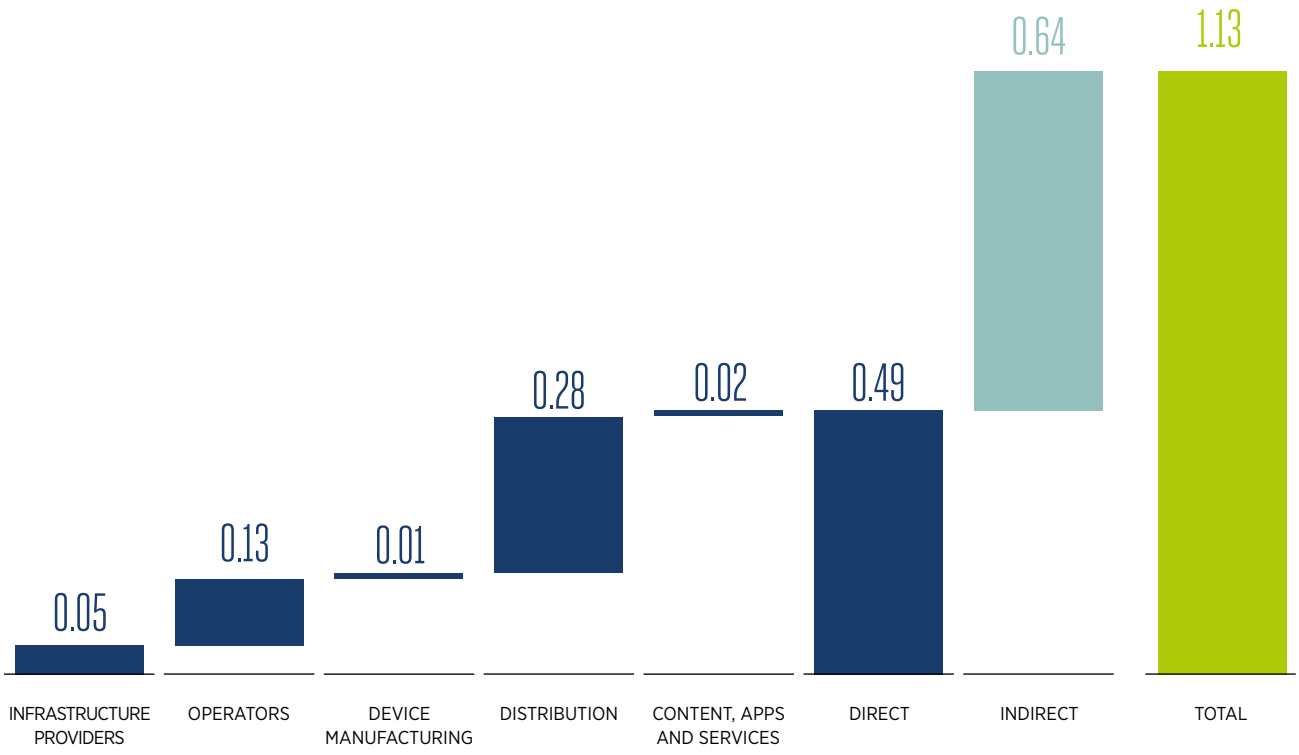
In 2016 mobile operators and the ecosystem provided direct employment to approximately 0.5 million people in the region. In addition to this, economic activity in the ecosystem generates jobs in other sectors. Firms that provide goods and services as production inputs for the mobile ecosystem (for example, microchips or transport services) 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 2016, 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 11 Source: GSMA Intelligence

Employment impact

Jobs (millions)



Note totals may not add up due to rounding.

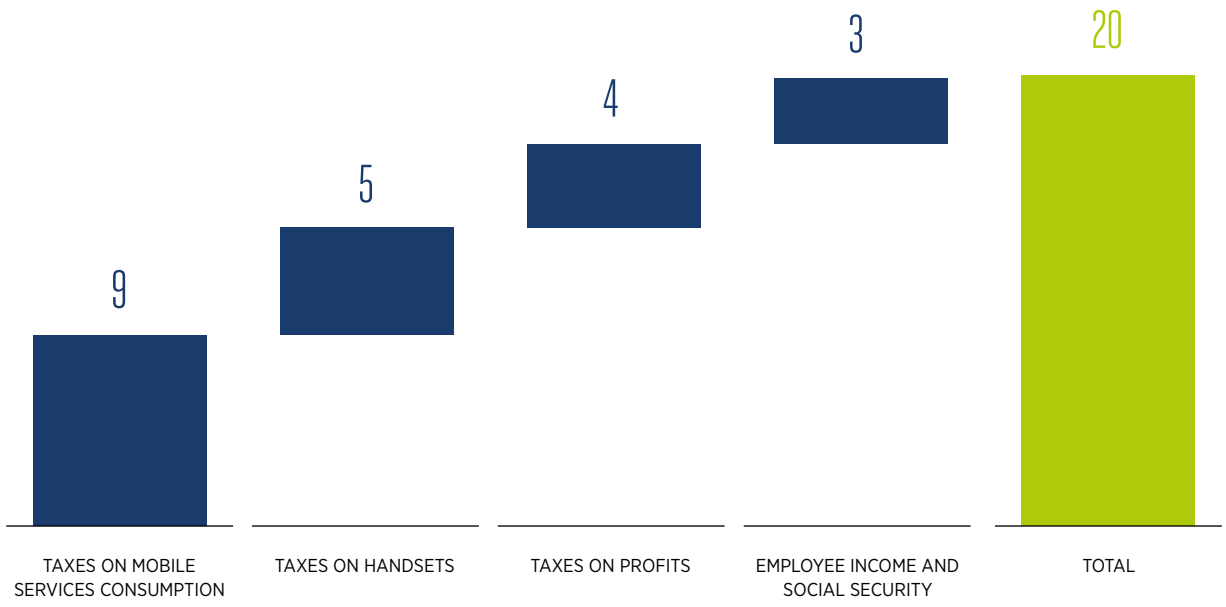
Public funding contribution

The mobile ecosystem also makes a significant contribution to the funding of public sector activity in the region through taxation. For most countries, this includes general forms of taxation (such as standard VAT, corporation tax, custom duties, income tax and social security contributions) and sector-specific consumer taxes (such as mobile-specific excise taxes on usage and/or handsets or higher sector-specific VAT rates). We estimate that the ecosystem made a tax contribution to the public finances of the region's governments of $20 billion in 2016.

Figure 12 Source: GSMA Intelligence

Contribution to public funding by the mobile industry

(2016 $ billion)



Note totals may not add up due to rounding.

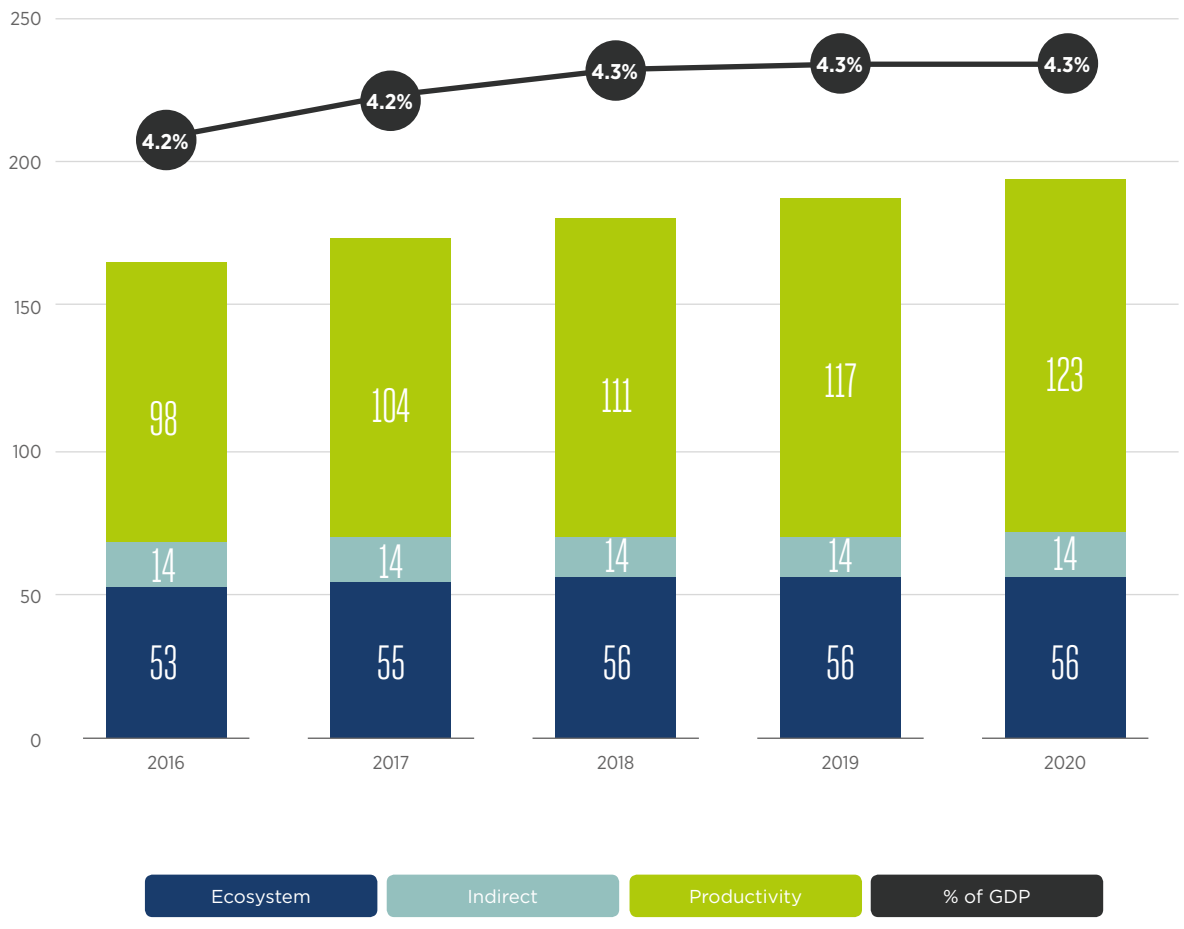
Outlook and trends for the period 2016–2020

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 (4.3% of GDP). The majority of this increase will be driven by improved productivity, particularly from the increasing adoption of mobile internet services.

Figure 13 Source: GSMA Intelligence

Outlook to 2020

($ billion, % of GDP)



Note totals may not add up due to rounding.

2.2 The platform for innovation across MENA

2.2.1 Engagement in mobile services

The Global Mobile Engagement Index (GMEI) measures the level of engagement of smartphone and non-smartphone users across a range of use cases and services. The higher the score, the more likely consumers are to regularly engage in using mobile services. The Index has been built based on inputs from the GSMA Intelligence annual Consumer Survey, which covers 56 countries worldwide – representing 80% of the global population. It is based on the computation of two scores for each country surveyed:

- **usage score** – the average number of mobile use cases in which adult phone owners engage
- **frequency score** – how often they engage in the use case on average.

Consumers are divided into four segments based on their mobile engagement levels: Aficionados (early adopters), Pragmatists (early majority), Networkers (late majority) and Talkers (laggards).[11]

Stark contrast in user engagement across MENA

MENA is a region of contrasts in terms of the level of mobile user engagement across countries and by developed and developing economies. Qatar has the highest level of user engagement globally of the 56 surveyed countries (joint first place with South Korea), while Egypt sits towards the bottom of the global rankings. Overall, the average GMEI score in developed MENA markets[12] is almost three times greater than those in developing markets.[13]

Table 1 Source: GSMA Intelligence

GMEI results for MENA countries

(ranking of 56 countries surveyed)

Rank	Country	Engagement score
1	Qatar	5.0
4	Saudi Arabia	4.6
13	Israel	4.2
37	Algeria	1.9
39	Morocco	1.7
49	Egypt	1.1

Note: score accounts for smartphone and non-smartphone users and is weighted based on unique subscriber penetration

11. For more information, see GMEI 2017: Global Mobile Engagement Index
12. Developed MENA markets: Israel, Qatar and Saudi Arabia
13. Developing MENA markets: Algeria, Egypt and Morocco

Part of this difference can be explained by varying levels of smartphone adoption: smartphone user engagement is almost twice the level for non-smartphone users in MENA, and smartphone adoption in developed MENA markets is as much as double that of the developing markets. However, smartphone adoption is not the whole story. Even among smartphone owners there are differences in the types of mobile services people in the region typically engage in, with users in developed markets using all categories of services much more frequently.

Figure 14 Source: GSMA Intelligence

Users in developed MENA markets more frequently engage in a variety of use cases

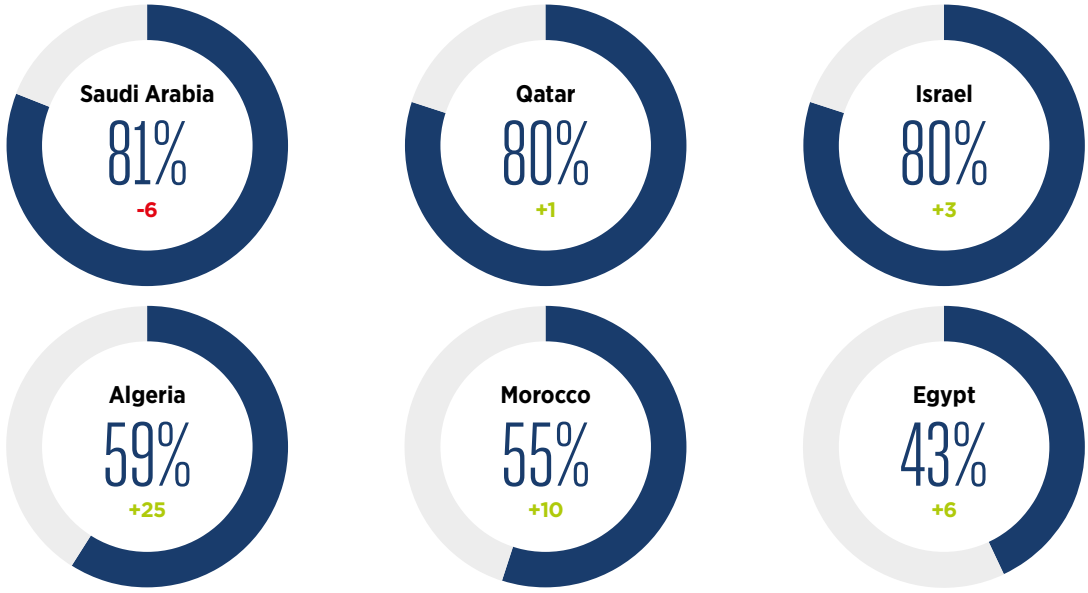
Note: includes smartphone and non-smartphone users

For example, more and more people across MENA are using IP messaging apps such as WhatsApp and Facebook Messenger. In Saudi Arabia, Qatar and Israel, more than four-fifths of mobile phone owners use IP messaging apps more frequently than SMS, and in Algeria and Morocco, use of IP messaging is growing rapidly, with more than 55% of mobile phone owners now using IP messaging apps more frequently than SMS.[14] Saudi Arabia saw a decline in people using IP messaging more frequently than SMS, largely due to services such as Facebook Messenger, WhatsApp, Line and Viber being intermittently banned in recent years; nevertheless, only 8% of mobile phone owners in Saudi Arabia do not use IP messaging at all.

Figure 15 Source: GSMA Intelligence Consumer Survey 2016

IP messaging use in MENA

Percentage of respondents who use IP messaging more frequently than SMS



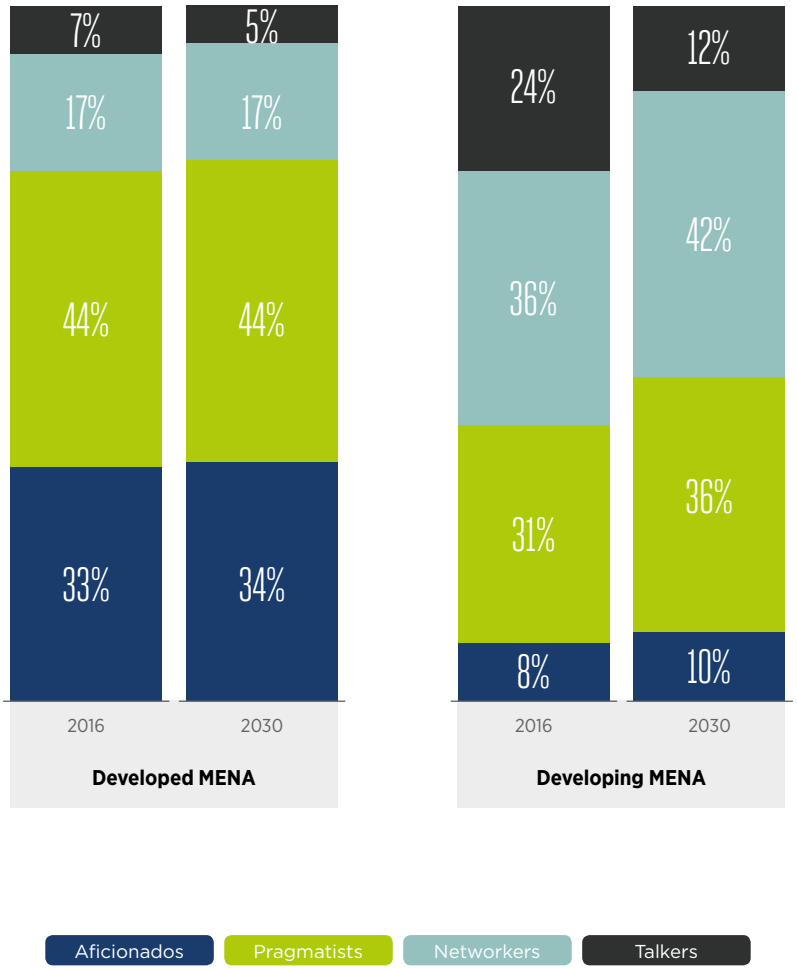
A key factor holding back the level of engagement across developing markets is the limited availability of mobile broadband networks, particularly 4G: across MENA developing countries, mobile broadband accounted for fewer than half of total connections on average in Q2 2017, compared to more than three quarters in developed countries. This limits what users can do on their phones, even if they do own a smartphone. Other important factors are digital literacy and the availability of content in the local language, both of which are challenges across the developing markets (see Section 2.3.1).

In the developed countries, the vast majority of smartphone owners are classified as either Aficionados – who show the highest engagement across all use cases and are very tech-savvy – or Pragmatists – who engage frequently with most use cases, but primarily those that are free. These segments have a good understanding of mobile technology and engage in entertainment, digital commerce and financial services on their phones. In developing markets meanwhile, most phone owners are classified as Networkers, who mainly use their smartphones to explore the internet, engage in social networks and communicate via IP messaging apps. There is also a larger proportion of Talkers, who only use their smartphones for traditional communication (voice and text).

14. Source: GSMA Intelligence Consumer Survey 2016

Figure 16 Source: GSMA Intelligence

Smartphone owners by segment



Over the next decade or so, the gap in internet penetration and smartphone adoption between developed and developing markets will narrow. Concomitantly, in these countries the proportion of smartphone owners who engage in additional services such as internet browsing, social networking and IP communications will rise. This will drive overall engagement up across the region as a whole. By 2030, the largest segments will be Pragmatists with 39% and Networkers with 35% (up from 36% and 29% in 2016 respectively). However, compared to the developed markets, there will still be a relatively small proportion of Aficionados and Pragmatists in the developing markets, indicating that more work will need to be done in terms of affordability, digital literacy and the regionalisation of online content to get more people engaged in additional services.

2.2.2
Areas of leadership

Smart cities

The Gulf region has one of the highest urbanisation rates in the world, home to cities such as Doha, Dubai and Riyadh that are increasingly congested, their transport and energy networks under ever increasing pressure. Additionally, economic/political insecurity and conflicts are affecting a growing number of countries across the region. Consequently, governments face pressing and complex challenges in the battle to improve the living standards of their citizens, such as reducing pollution and mitigating the consequences of climate change, and more efficiently managing economic resources.

City managers and local government decision makers can address these challenges and generate significant social and economic benefits for their citizens and businesses through well-conceived, designed and implemented smart city services. For example, lives can be saved with IoT monitoring technology enabling faster emergency services response; fuel costs and carbon emissions can be reduced through efficient smart transport networks; and smart metering and smart building plans can generate significant energy savings of hundreds of GWH in large cities across the region.

Examples of such developments include the following:

- **Saudi Arabia:** after almost a decade and investment of more than $10 billion, the King Abdullah Financial District in Riyadh hopes to open its first phase for business in 2017. Envisaged as a pioneering financial hub, the city boasts energy-efficient glass skyscrapers and aims to offer a futuristic smart city experience, extending across mass transit, energy supply and more.

  Additionally, in April 2017, the Ministry of Municipal and Rural Affairs launched the "application of smart city concepts" initiative as a part of Saudi Arabia's National Transformation Program 2020 and Vision 2030, with the goal to enhance urban development, sustainability and competitiveness, as well as boost citizen satisfaction. The plan also aims to improve city management efficiency, minimise negative environmental impact, attract local and foreign investment, and create job opportunities. The initiative, in partnership with the private sector, will target five cities across the country by 2020, and will bring together various 'smart' components, including buildings, drainage networks, street lighting and security, transport, utilities, communications (e.g. Wi-Fi) and emergency response systems.

- **UAE:** Smart Dubai, formally undertaken in March 2014, brings together the private sector and government partners and integrates technologies such as ICT and IoT into its infrastructure, aiming to transform its networks and services into a more intelligent and collaborative ecosystem. By delivering and promoting an efficient, seamless, safe and impactful city experience for residents and visitors through its six dimensions – Smart Economy, Smart Living, Smart Governance, Smart Environment, Smart People and Smart Mobility – the ultimate goal is to make Dubai the 'happiest city on earth'. One part of the project, the Dubai Silicon Oasis Authority (DSOA), hopes to attract new business through provision of state-of-the-art smart city facilities, electric cars, remote controlled digital signage, free Wi-Fi and intelligent controls of water supply and consumption.

  In March 2017, the Smart Dubai Office (SDO) announced plans to implement blockchain technology into services across the city, aiming to make Dubai the first blockchain-powered government in the world by 2020. And in May 2017, the SDO launched 'Dubai Now', a single platform for accessing more than 50 smart services from the government and private sector.

  The platform targets the public, visitors and the business sector, and allows users to, among other services, pay traffic violations, water and electricity bills, and Etisalat and Du fees; top up Salik and Nol cards; access Dubai Customs accounts; and track visa applications.

Mobile networks can support smart city deployments that are secure, scalable and robust. Mobile IoT networks are uniquely positioned to securely connect various sensors across cities, and can support low power wide area (LPWA) technologies. These provide very low power consumption (with battery lives in excess of 10 years for some applications), very low modules costs, optimisation for very brief messages typical of IoT applications, good indoor and extended outdoor coverage, scalability, security, easy maintenance and suitable integration into unified IoT platforms.

Digital identity

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.

Mobile Connect is a secure universal login 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 already has around 90 million registered users 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 two deployments of Mobile Connect in the region to date: by Orange Morocco and Turkcell. Various other operators (such as in Jordan and the UAE) are planning to launch Mobile Connect services soon.

Mobile Connect in Turkey

In December 2015, Turkcell launched Mobile Connect on its self-care mobile site, followed by full integration into the self-care website in April 2016, reducing the authentication process from three steps to one. In addition to the self-care portals, two further Turkcell applications now use the Mobile Connect solution: the corporate site and the Piri travel application.

To drive usage, Turkcell made Mobile Connect the default login option in November 2016, and the portal was redesigned in December 2016 with "Fast Login (powered by Mobile Connect)" branding. As a result, the proportion of people using Mobile Connect to access the mobile site rose eightfold, while daily transactions increased by 80%. As of April 2017, around half of all logins to the Turkcell self-care portal were via Mobile Connect. By July 2017, there were 2.75 million registered users – just under 10% of Turkcell's base.

In the near future, Turkcell is planning to integrate Mobile Connect into other Turkcell apps. It also intends to launch a higher security option with a PIN as a second authentication factor, and aims to employ Mobile Connect to enable authorisation as well as authentication. It is considering expanding the solution so it can be used by other operators' subscribers via a one-time password delivered via SMS.

2.2.3
Supporting the startup community

New and innovative digital players have often successfully capitalised on the rapid growth of the digital ecosystem, capturing the opportunity at a fast pace and even cannibalising some of the mobile operators' value-added services. This has led mobile operators to realise that collaboration with tech start-ups is essential to their own development, allowing them to:

- drive user acquisition and retention by enhancing product offerings
- create new avenues of ARPU growth beyond access revenues
- improve customer engagement and customer satisfaction by modernising touchpoints and providing more relevant services to customers
- generate cost efficiencies through digitisation of the core telecoms business.[15]

Additionally, in a virtuous circle, such collaboration is helping scale innovative and sustainable mobile services in emerging markets. By supporting innovators to secure the funding and direction they require to bring their products and services to scale, mobile operators are helping to deliver the most impactful mobile solutions to the people and places that need them most, and generate the greatest socioeconomic impact.

The startup community is increasingly using mobile technology to deliver initiatives and programmes across the region, and the mobile industry is helping in three ways: funding, either directly through corporate venture capital or via innovation funds; tech hubs and accelerator programmes; and APIs.

Funding

Recent years have seen a significant rise in mobile operators seeking to invest in start-ups to accelerate innovation and protect themselves from disruption. While most activity has focused on developed markets, mobile operators in emerging markets have realised the potential of such investments: in 2015 alone, telecoms operators invested $3.2 billion in tech companies in emerging markets.[16]

- Saudi Arabia's STC Ventures is a Dubai-based operation that executes investments in the IT, telecoms and digital media/entertainment sectors in the region. Its portfolio includes several Middle Eastern technology companies including Careem, a Dubai-based rival to Uber with 10 million registered users in 11 countries and a valuation of more than $1 billion.
- Vodafone Ventures has invested in numerous Egyptian companies, including Eshtery (a virtual shopping service), Eventtus (an event management platform) and Swipe'nTap (an interactive marketing solution).
- The GSMA Ecosystem Accelerator Innovation Fund[17] aims to build collaboration between start-ups and mobile operators, helping operators overcome challenges innovating in emerging markets, and start-ups overcome challenges preventing them from scaling. Supported by the UK Department for International Development, the first round of funding resulted in support for one start-up from the MENA region, Raye7, a culturally sensitive carpooling solution for daily commuting in Egypt. The second round of funding, focused on supporting start-ups operating in the sharing economy, and developing services for micro, small and medium-sized enterprises (SMEs), closed in July 2017, with winners to be announced later in the year.

15. Building synergies: How mobile operators and start-ups can partner for impact in emerging markets, GSMA, January 2017
16. Corporate venture capital: An opportunity for mobile operators and start-ups in emerging markets, GSMA, October 2016
17. www.gsma.com/eainnovationfund

Tech hubs and accelerators

Tech hubs, incubators and accelerators provide start-ups with business support and services to help them scale, usually by facilitating access to critical resources such as skills, funding, technology, business network and digital tools. Although the more advanced countries such as Israel and the GCC States are historically the centres of innovation in the region, countries in North Africa are becoming much more active in this space: the GSMA has identified 71 active tech hubs, incubators and accelerator programmes across five countries in MENA, with Egypt, Morocco and Tunisia particular hotbeds of activity.[18]

- For example, the Orange Developer Center in Tunis, Tunisia is a training and collaboration space for start-ups in the production phase. In May 2016, Orange completed an upgrade to increase space and capacity, and to provide start-ups with the latest equipment (including cloud services and virtual machines).

APIs

Application programming interfaces (APIs) are bridges between mobile operators and start-ups that launch mobile services, allowing third parties to use certain mobile network functions within their applications, such as messaging, billing, location or mobile money to provide mobile services to their end users. For example, a start-up can offer SMS-based localised content to its users depending on their city or area, and then charge them by deducting the amount from their mobile airtime. Such a service would leverage three operator APIs simultaneously: SMS, location and direct operator billing. In emerging markets, where mobile operators are the main enablers of the digital economy, operator APIs are a powerful channel for unlocking creativity and giving the start-up ecosystem a boost.

- Orange has opened several APIs across MENA, including direct carrier billing in Egypt, Jordan, Morocco and Tunisia; SMS in Egypt and Tunisia; and the #303# My Store API in Egypt. Start-ups already using Orange billing APIs include Istikana (an online video service based in Jordan) and STARZ Play (a SVOD service provider headquartered in the UAE). By the end of 2018, Orange plans to expand the coverage of its existing API portfolio to all of its five operations in the region, and release its Mobile Connect API in Egypt and Morocco.

18. A few things we learned about tech hubs in Africa and Asia, GSMA, August 2016

2.3 Addressing social challenges

2.3.1 The connectivity gap in MENA

Digital technology is evolving rapidly, leading to the emergence of new services and applications that are transforming the way people live, work, play and communicate. The large-scale societal adoption and use of digital technologies is a key driver of measurable economic, social and cultural value, including increased productivity, a rise in employment rates, improved security and greater capacity to tackle social and environmental issues.

The penetration of the mobile internet in MENA has doubled over the last six years, reaching just under 40% of the population by mid-2017. By the end of the decade, an additional 67 million people are expected to gain access to the mobile internet across the region, bringing the total to 295 million – 48% of the population.

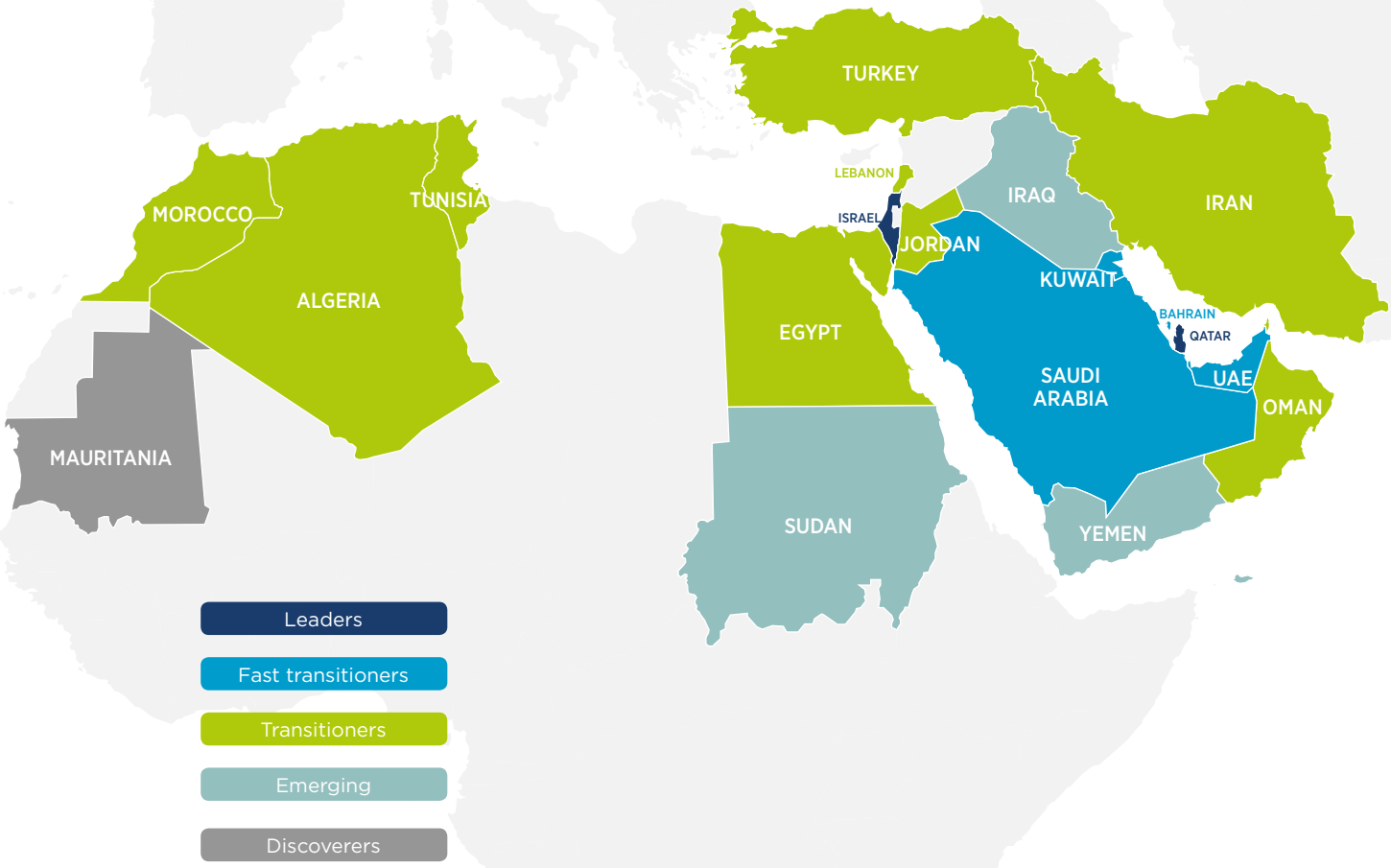
However, despite the steady progress, a vast digital divide remains in many parts of MENA, particularly in the developing countries: across the region, there are 350 million people without access to the mobile internet. In order to understand the reasons behind this connectivity gap, the GSMA Mobile Connectivity Index measures how the key enabling factors for mobile connectivity differ across markets, helping focus the efforts and resources of the mobile industry and wider international community on the right projects in the right markets at the right time, so progress towards universal connectivity can be as swift and economically sustainable as possible.[19]

19. For more information see the Mobile Connectivity Index Launch Report.

Figure 17

Source: GSMA Intelligence

The Mobile Connectivity Index in MENA



The index is built around four key enablers of mobile internet connectivity, which are critical to creating the right conditions of supply and demand for mobile internet connectivity to flourish:

- **infrastructure:** the availability of high-performance mobile internet network coverage
- **affordability:** the availability of mobile services and devices at price points that reflect the level of income across a national population
- **consumer readiness:** citizens with the awareness and skills needed to value and use the internet and a cultural environment that promotes gender equality
- **content:** the availability of online content and services that are accessible and relevant to the local population.

Reflecting the diversity outlined throughout this report, the MENA region is home to countries that sit in every cluster of the Connectivity Index: from 'Leader' countries Israel and Qatar, to Mauritania, a 'Discover' country that sits towards the bottom of the global ranking. Of the 350 million unconnected across MENA, more than 60% live in five countries – Egypt, Iran, Iraq, Sudan and Algeria. Each of these countries faces challenges around the four key enablers of mobile internet connectivity.

Table 2 Source: GSMA Intelligence

Factors behind the connectivity gap

	Mobile Connectivity Index	Infrastructure	Affordability	Consumer readiness	Content	Mobile internet penetration	Unconnected population (m)
MENA	**58**	52	62	59	63	39%	350
Egypt	**55**	46	60	52	65	32%	64
Algeria	**53**	41	65	55	53	39%	25
Iran	**51**	40	49	70	51	33%	55
Iraq	**48**	42	50	44	56	16%	32
Sudan	**39**	32	40	40	46	30%	29

Many countries in MENA face issues around **infrastructure**, and this is a key factor behind the large connectivity gap in the region. The challenges differ from market to market:

- Low 2G coverage: in the last year or so, MTN Sudan and MTN Irancell have reported 2G population coverage of only 55% and 86% respectively, well below the 98%-plus that most countries exhibit.
- Low 4G coverage: Egypt is yet to launch 4G services, and all other countries have low 4G coverage, especially Sudan (10% of the population), Algeria (24%) and Iraq (25%). The regional average is 37%.
- Spectrum issues: all five countries have still not completed the digital switchover process, and are therefore yet to allocate spectrum in the digital dividend band (700 MHz) to mobile services (as outlined in Section 1.2, Saudi Arabia was the first in MENA to do so in July 2017). This band is key to bringing affordable 4G mobile broadband services to all parts of MENA – from urban centres to rural villages. These countries, as well as many others across the region, are now at a disadvantage when it comes to supporting rapidly growing mobile broadband uptake and usage as well as advanced 4G, and in future 5G, services.

Affordability is generally less of an issue in these countries compared to the regional average, given that monthly costs are relatively low (at less than $5 per month, Algeria Egypt, Iran and Sudan have among the lowest ARPU levels in the world). However, due to the wide income distribution and high poverty rate in some of these countries, particularly in Iraq and Sudan, affordability is a critical issue for those at the bottom of the pyramid, for whom mobile ownership can account for a prohibitive proportion of their average income. In addition, high sector-specific taxation in some of these markets (for example in Algeria and Egypt[20]) can reduce the affordability of services, potentially contributing to the poorer sectors of the population remaining unconnected.

In terms of **consumer readiness**, without the necessary skills and supporting cultural environment, individuals will not understand how to use the mobile internet or appreciate how it can benefit them. Individuals, especially women, might also find themselves prevented from accessing the mobile internet. It is therefore important to consider the skills and education levels of a country, as well as the degree of gender equality in education, finance and in the labour market: these factors influence the 'Consumer readiness' indicator of the Mobile Connectivity Index. Iraq and Sudan have particular challenges in this regard: the literacy rate is below 76%, only 46% and 16% of the population respectively have at least some secondary education, and less than half of adults participate in the labour market. Further, gender inequality is a particular issue in these countries: the male-to-female ratio of labour force participation is more than 3:1, and only 36% and 14% of women respectively have some sort of secondary education.[21]

Availability of **content** is also an issue, though not as significant in MENA as it is in other regions such as Asia Pacific or Sub-Saharan Africa. English is spoken widely throughout the region, so availability of apps in local languages is not a major problem. The exception is Iran where, although Persian is the official language, it is only spoken by around half the population; the remainder is divided between dozens of other languages. Aside from language, there are other concerns – particularly in Algeria and Sudan – around content creation (both apps and websites) and a lack of e-government services.

All the countries of the MENA region have seen an increase in their Connectivity Index score in the last year, primarily due to improvements in infrastructure (a number of countries launched 4G services in 2016, while others saw significant gains in 4G coverage and network quality). Further, eight of the 19 countries included in the Index have progressed in terms of their cluster grouping since 2014. The country that has improved the most is Iran, increasing by 8.6 percentage points in the last two years and progressing from an 'Emerging' to a 'Transitioner' country. This was driven by significant developments in enablers associated with infrastructure (expansion of 3G and 4G coverage as well as improvements in latency) and content (gains in social media engagement and availability of content in local languages).

20. Delivering mobile connectivity in MENA: A review of mobile sector taxation and licence extension, GSMA, May 2017
21. World Bank

2.3.2

Addressing the UN Sustainable Development Goals

The GSMA and mobile operators are united in support for helping achieve the UN's Sustainable Development Goals (SDGs) in MENA. With its reach of 5 billion people across the globe, mobile is already playing a key role in tackling various social and economic challenges around poverty, health, education, gender equality, employment, safer cities, climate change and identity.

No poverty

End poverty in all its forms everywhere.

MOBILE OPERATOR INITIATIVES

Over 60% of the population is financially excluded in MENA – a higher proportion than all regions except 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.

By providing the poor with the financial services they need to make investments and manage unexpected expenses, the mobile money industry is helping to eliminate extreme poverty. The industry is also contributing to job creation, entrepreneurship, and the growth and stability of the financial system in many markets, all of which help to reduce poverty.

CASE STUDY

Mobile money

Mobile money services were first launched in the region in Somalia in 2009. There are now 24 live services in nine 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.

In early 2016, Jordan became the first country in the region to implement interoperability of mobile money services after the successful launches of Mahfazti in January and 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.

Education

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

MOBILE OPERATOR INITIATIVES

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.

CASE STUDY

Developers of the Future, Turkey

Turkcell's Developers of the Future brings together people who have an interest in software development in the mobile and digital world. The aim is to help 50,000 mobile application developers receive technical training and develop applications, commercialise the applications, and grow qualified human resources for both Turkcell and the wider mobile ecosystem.

Clean water and sanitation

Ensure access to water and sanitation for all.

MOBILE OPERATOR INITIATIVES

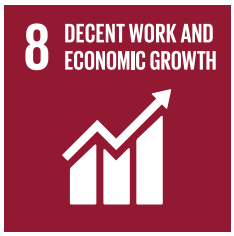
Clean, accessible water for all is an essential part of the world we want to live in. There is sufficient fresh water on the planet to achieve this. But due to bad economics or poor infrastructure, every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation and hygiene.

Water scarcity, poor water quality and inadequate sanitation negatively impact food security, livelihood choices and educational opportunities for poor families across the world. Drought afflicts some of the world's poorest countries, worsening hunger and malnutrition.

CASE STUDY

The Origin Project, Egypt

The Origin Project is a comprehensive initiative that tackles the problem of water scarcity, with the aim of raising awareness of the need for water conservation in Egypt. Through this project, Etisalat has been able to provide and increase access to household safe water connections in poor communities, thus improving the health and nutrition of children in the targeted communities through reducing the frequency of diseases related to poor quality water and hygiene. So far, half a million Egyptians have benefited from a clean water supply through the project.



Employment

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

MOBILE OPERATOR INITIATIVES

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.

CASE STUDY

JobMatch, Palestine

Souktel partnered with the World Bank and the Palestinian Ministry of Education to launch the mobile JobMatch service on four Palestinian college campuses. Three of them had never offered any type of career resources to their students. After 12 months of use by 400 new college graduates, over 25% of users had found work/internships through Souktel (versus a 15% success rate at traditional HR firms) and more than 60% of employers using the service had cut hiring time and costs by over 50%.

Students quickly embraced the service for its ease of use and cultural relevance – women could find jobs without having to travel to the city, and job searching via SMS could be quickly done between classes or while on the go. Since the initial pilot, JobMatch has grown into a nationwide service, with 10,000+ daily users across the West Bank.

Reduced inequalities

Reduce inequality within and among countries.

MOBILE OPERATOR INITIATIVES

Asia Pacific is the world's most disaster-stricken region, affected frequently by hydrological (e.g. floods, droughts, typhoons) and geophysical (e.g. earthquakes) disasters.

Mobile networks and the connectivity they provide can be a lifeline for those affected by natural disasters and other humanitarian emergencies. They are vital to facilitating access to information and coordinating assistance within affected populations and among governments, first responders and the international humanitarian community.

CASE STUDY

Vodafone Turkey Farmers' Club

The service provides text updates on local weather forecasts, market price information, general information on the agricultural sector, agronomy tips and news.

As an example, one user saved TRY60,000 ($17,000) worth of product when she received a weather warning from the Farmers' Club forecast service. Before she started using the service, she was not able to prepare for difficult weather conditions.

Sustainable cities

Make cities and human settlements inclusive, safe, resilient and sustainable.

MOBILE OPERATOR INITIATIVES

The MENA region has suffered considerable political upheaval over the last decade. Ongoing disputes in countries such as Iraq, Yemen and Syria have led to mass migration as civilians flee conflict zones. Of the 10 countries with the highest number of displaced citizens in 2015, four were in the MENA region, and the region accounts for 39% of the global displaced population.[22]

Mobile networks and the connectivity they provide can be a lifeline for those affected by such humanitarian emergencies. They are vital to facilitating access to information and coordinating assistance within affected populations and among governments, first responders and the international humanitarian community.

CASE STUDY

Jordan

Due to the war in neighbouring Syria, there are currently an estimated 2.9 million refugees in Jordan, accounting for nearly 30% of the country's 9.2 million population.[23]

At the Za'atari refugee camp, the UNHCR distributes SIM cards to all incoming Syrian refugees and records each of their individual phone numbers in their database. Group SMS messages can then be used to ask individuals to update or verify their personal details, or to track refugee movements and maintain communication with those who have left refugee-designated areas. Mobile devices are also being used to scan the barcodes found on refugees' identity documents and verify whether they are eligible for a range of services, such as food, clothing or cash aid.

22. UNHCR
23."Population stands at around 9.5 million, including 2.9 million guests", The Jordan Times, January 2016

3

Policies for a digitally advanced society

With the rapid evolution of digital technologies, businesses are growing more efficient and creating new commercial opportunities, while consumers are embracing mobile-centric lifestyles. The benefits of digitalisation across the economy and society are evident — certainly for those who live in the advanced urban centres across MENA. Digital entrepreneurship in the Gulf region has generated many success stories, including e-commerce player Souq.com from Dubai and food-ordering service Talabat.com, which started in Kuwait City. In an era of massive urbanisation, Dubai is recognised as a leading smart city, using connectivity and mobile networks to create an efficient, convenient and sustainable environment for its citizens.

Public policy and regulation are key factors in the spread of mobile-enabled services across MENA. By setting the right regulatory context, governments create the incentives for mobile operators to continually upgrade and expand mobile services in the region. Since taking the first steps towards sector privatisation and market-based competition two decades ago, telecoms authorities have played a crucial part in enabling mobile networks to become the 'nervous system' of a truly connected society.

The digital transformation, however, is by no means complete. Technological advances are surging ahead, releasing a flood of connected devices that will soon permeate modern society and industry. However, a persistent digital divide exists where not everyone is able to engage with the digital economy. More should be done to foster digital innovation and ecosystems in the MENA region. Meanwhile, the mobile sector is subject to a host of regulations that hold back operators' ability to fully participate in the dynamic digital economy.

3.1
Advancing digital transformation

Telecoms markets have changed considerably over recent years with the convergence of technologies and services and the emergence of internet players and the digital ecosystem. However, the policy framework for the digital ecosystem has not kept pace with this movement to a data-focused economy and has left aspects of telecoms regulation obsolete.

Telecoms regulation was devised for an industry that no longer operates in the same way and faces competition from many directions. Mobile operators should be allowed to compete equally with other digital players, but they remain constrained by legacy regulations. Internet players, whose services have been embraced by mobile users across the MENA region, are by comparison very lightly regulated, despite offering comparable communications services such as voice or messaging. This creates unnecessary market distortions and holds back an entire industry.

Policymakers should strive to set policies that foster competition and protect consumers, without impeding technological, social and economic progress. This will require a fresh look and update to regulations so that they better reflect today's technologies and markets. By lifting the burdens on the mobile sector, policymakers can generate a surge in the digital development of the economy and society, on par with the most advanced economies worldwide.

3.2 Modernising regulation: three focal points

The GSMA encourages governments across MENA to review and recalibrate telecoms policy to advance the digital transformation and to reflect the new market dynamics. There are three key areas that require close attention: the rules governing the use and storage of consumer data, licence duration and renewal, and the costs incurred by mobile operators.

Use and storage of data

Cross-border transfers of data play an important role in innovation, competition and economic and social development. While data security and privacy are fundamental to building consumer trust in digital services, the free movement of data enables the digital economy to operate efficiently. As a result, consumers benefit from wider service choice, global service quality and lower service prices. Companies that are able to treat data consistently across their international operations can innovate more rapidly, achieve larger scale and reduce costs. Requirements for companies to store and process data domestically, for example, create unnecessary duplication and cost for companies, and there is little evidence that such policies produce improved privacy protections for individuals.

Licence duration and presumption of renewal

The prospect of licence expiry creates significant uncertainty for mobile operators, which has the effect of stifling investment in network infrastructure and operations. A transparent, predictable and coherent approach to licence renewal is therefore important, enabling operators to make rational, long-term investment decisions. The GSMA recommends that governments and regulators work on the presumption of licence renewal for existing licence holders. Exceptions should only apply if there has been a serious breach of licence conditions. New licences should be granted for longer terms, so that investors can realise a reasonable return on their investment.

Cost of doing business

With the nascent 5G mobile technology set to enable a new wave of products, services and industrial advances across the economy, mobile operators must find the means to deploy the infrastructure and adapt to the new digital landscape. This next phase of mobile evolution is underway, even as operators are upgrading and expanding their networks to meet the massive growth in mobile data and to extend mobile service further into rural areas. Policymakers and regulators must recognise that, to achieve their government's policy objectives for digital development, mobile operators must have the resources to extend and improve their networks, and the commercial justification for ongoing investment. Costs imposed by governments through licence fees, spectrum and taxation, among many other obligations, could in some jurisdictions be quite prohibitive, and have a significant impact on the industry's ability to deliver advanced mobile connectivity across the region. The industry recommends the following approaches:

- **Licence fees** should be set at a level that helps governments recover the costs of administering licences and regulating the sector – but should not be used to maximise government revenue.
- **Spectrum costs** constitute the largest investments that mobile operators must make. Spectrum auctions designed to get the highest price can undermine the objective of allocating spectrum efficiently to mobile operators that are able to deploy networks quickly and generate the most use from their frequency bands. Again, the primary goal for policymakers and regulators should be to maximise the value to society – rather than the revenue to the state – from spectrum use.
- **Sector-specific taxes** can raise consumer prices and deter the uptake of mobile services, slowing the adoption of digital technologies overall. Lowering this kind of tax benefits consumers and businesses and boosts socioeconomic development. This can, in turn, accelerate digital development and increase government revenues in the medium to long term.

The GSMA advises that policymakers take a fresh look at legacy rules and discard those that are no longer relevant, while paying close attention to policies that may discriminate against communication providers relative to other participants in the digital ecosystem. In many cases, intense competition in the ecosystem means regulation is no longer needed, or can be significantly scaled back. Tomorrow's technologies must not be stifled by yesterday's regulation. By updating the regulatory framework, policymakers can ensure that government and industry are aligned to create a growing digital society for everyone.

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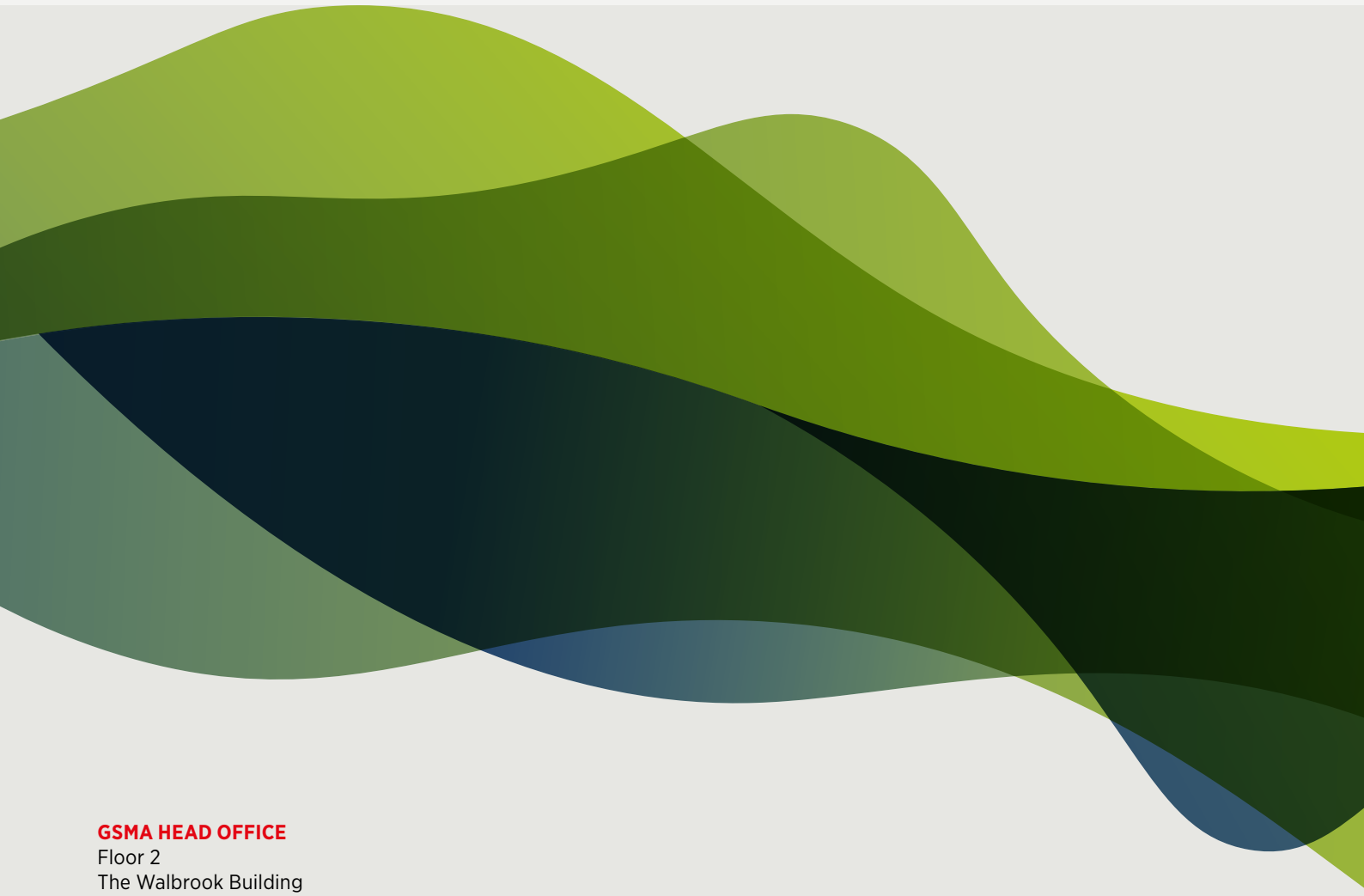

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