



The OTT conundrum for MENA telecoms

Achieving sustainable growth in a digital world

Arthur D Little

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Executive summary

In this edition of the Arthur D. Little regional telecom report we aim to provide a nuanced view of the growth patterns within the region, as well as deconstruct the growth to its underlying reasons in four key markets. An important focus area is the threat of core revenue disruption by over-the-top (OTT) players in messaging, voice and video. On the surface, there exists a deceptive view of homogeneity for the South Asia, Middle East and North Africa region, and for especially the sub-regions of Middle East and North Africa (MENA), such that these markets appear very similar. In reality, the local information and communication technology (ICT) markets are quite varied.

Throughout the region regulators have been playing a prominent role, and in many countries telecom operators have been operating in a relatively benign environment. This has often resulted in non-disruptive competition, limited erosion of traditional messaging and voice revenues, and higher end-user price levels – in particular in the Gulf markets and the Levant. This, coupled with strong population growth, has resulted in a relatively “easy” market for many telco operators up until this point. Our analysis and discussions with local decision-makers present several interrelated conclusions:

- **This benign environment will not survive**, and we believe that digital market dynamics will prevail. In spite of efforts to block or interfere with OTT usage, it is already widespread in the MENA region and SMS and voice revenues per capita are starting to decline. **Some markets have already lost 30–50% of their total messaging revenues and 4–11% of their voice revenues due to lower usage of traditional services** over the last four years. Furthermore, regulatory changes might increase the level of competition, exacerbating the situation.
- We believe telecom operators in the region should **ride, not fight, the OTT wave**. This will entail a successful rebalancing of consumer spend towards more data usage. Meanwhile, a strong value proposition that moves usage towards **attractive bundles of voice, data and SMS** can sustainably drive revenues. Partnering with OTT players and better utilization of own telecom assets represent an additional opportunity to monetize data usage.
- For video, **an opportunity might still exist** in the short to medium term for a **regional OTTv champion**. A minimum of **1.8m subscribers across the region** are required for scale and success, backed by premium content acquisition and flawless execution.
- We believe that these measures will not be enough for long-term growth, though. To remain viable, **telecom operators should rethink their business models across their fixed and mobile businesses**. **Players should embrace adjacent revenue streams**, in particular verticals such as ICT and “smart everything”. These are especially relevant for the more developed regional markets with high broadband penetration.
- Finally, **operators should think beyond opportunities for growth** and implement measures to become leaner, and more efficient organizations.

Introduction – MENA definition

For the purposes of this report, we consider the MENA region as consisting of the following 18 countries: the UAE, Saudi Arabia, Oman, Kuwait, Qatar, Bahrain, Yemen, Iraq, Iran, Syria, Palestine, Lebanon, Jordan, Egypt, Libya, Algeria, Morocco and Tunisia.

Furthermore, wherever relevant, we split the countries into the following regional groups:

- Gulf Cooperation Council – the UAE, Saudi Arabia, Oman, Kuwait, Qatar, Bahrain;
- North Africa – Egypt, Libya, Algeria, Morocco and Tunisia;
- Rest of region – Yemen, Iraq, Palestine, Lebanon, Jordan;
- Markets where currency devaluations have influenced the economy and the telecom market – Iran and Syria.

This report does not explicitly cover Sudan, Turkey or South Asian markets.

1. Most MENA operators have been living in a benign environment

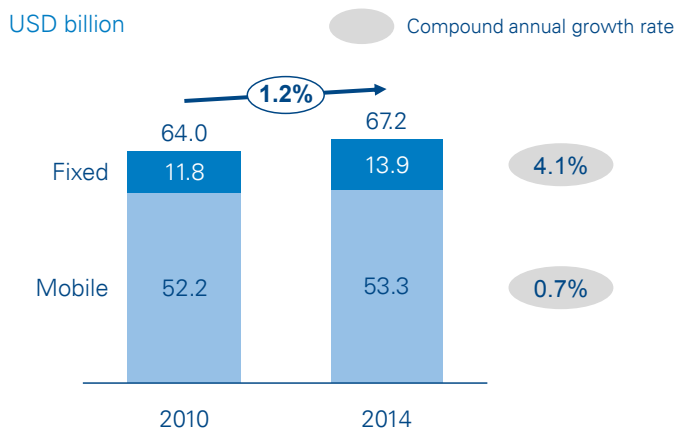
In this chapter we look at the market evolution of the telecommunications market around Middle East and North Africa as well as the prevailing market structures and regulatory environment. We show that the market has posted moderate growth that varies by sub-region and that various regulatory decisions play key role in the market dynamics.

The MENA telecom market continues its growth

The telecommunications markets in the MENA region have continued their moderate growth. Between 2010 and 2014, telecom revenues in the region grew at 1.2% CAGR, reaching USD 67.2 bn in 2014; overall growth since 2010 has been 4.5%. Compared to the developed markets of Europe and North America, the region has been thriving: European telecom revenue¹ has been declining at an annual rate of 3.4%, whereas North American revenue has posted sluggish growth of 0.3% annually for the period².

In 2014, while mobile revenues represented the lion's share at 79%, growth has been driven by fixed revenues (4.1% CAGR), and mobile has grown at a rather subdued 0.5% CAGR.

Figure 1: Evolution of MENA telecom revenues

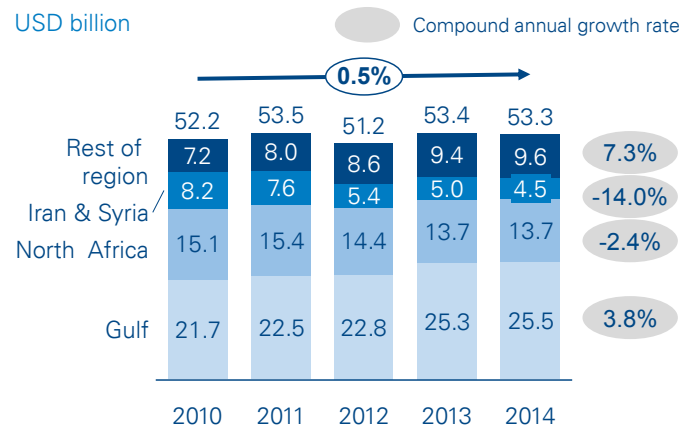


Source: BMI; Pyramid Research; Arthur D. Little analysis

Breaking down this performance by sub-region reveals a more nuanced performance, though. In mobile, two sub-regions have grown significantly faster than the region average – the GCC markets (3.8% p.a.) as well as the countries of the “rest

of the region” (averaging 7.3% p.a.), on the back of increasing penetration as well as data revenue growth. In the “rest of the region”, for instance, average mobile penetration has increased from 65% to 85% of the population over four years. The stronger competition in the North African markets has resulted in erosion of average revenue per capita (ARPC), particularly in voice, leading to decline of overall market revenue. Finally, Iran and Syria have suffered from currency devaluation, which has caused their markets to decline in US dollar terms. The combined decline of these two markets amounts to USD 3.7 bn in the absence of this decline, overall MENA mobile market growth would have been far healthier at 2.7% p.a. for the period.

Figure 2: MENA mobile revenues



Source: Pyramid Research; Arthur D. Little analysis

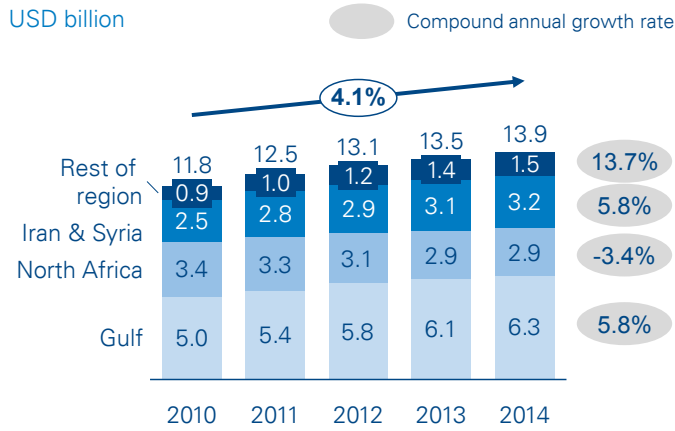
Fixed revenue is showing stronger growth, increasing at an average of 4.1% p.a. during the period. The growth has been strongest in the Levant, Iraq and Yemen (13.7% p.a.), followed by the GCC region and Iran and Syria³ at 5.8%.

1 In eight Western European markets: Germany, France, UK, Italy, Spain, Netherlands, Belgium, Portugal; CAGR for 2011-2015 (estimate)

2 Source: MarketLine, Arthur D. Little

3 Fixed revenues in Iran and Syria for 2010-2013 restated with 2014 exchange rate.

Figure 3: MENA fixed revenues

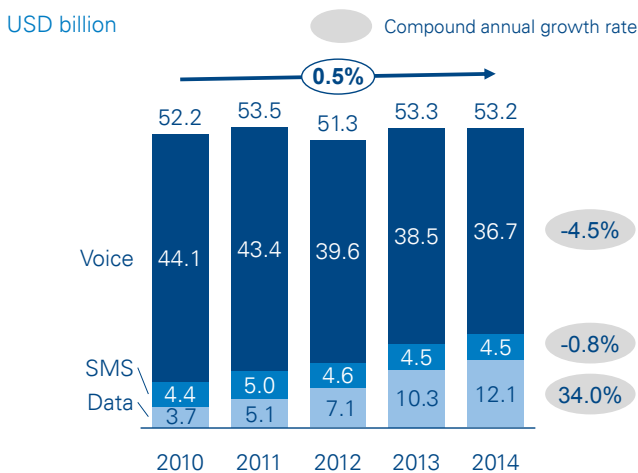


Note: Iran and Syria fixed revenue for 2010-2013 restated at 2014 exchange rates
Source: Pyramid Research; Arthur D. Little analysis

Data – the growth driver

In 2014, the vast majority of mobile revenues (69%) in the region were derived from voice, as opposed to data (23%) and SMS (8%). However, voice has been on a clear downward trend, losing on average almost 4% p.a. of the total market since 2010. On the contrary, the share of data in overall revenues has more than tripled in the same period – from 7% to 23%. This is still years away from developed-market dynamics, where in some instances mobile data revenues have surpassed mobile voice. We estimate that this moment will come in the most developed markets of the MENA region towards the end of our forecast horizon in 2020.

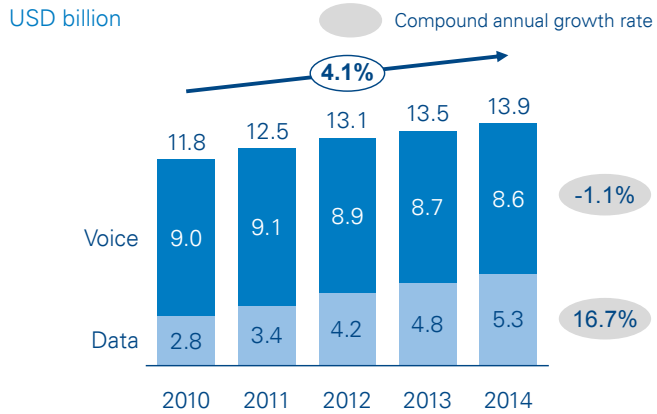
Figure 4: MENA mobile revenues – breakdown per revenue stream



Source: Pyramid Research; Arthur D. Little analysis

Similarly, in fixed, 62% of revenues come from voice. At the same time, voice revenues are declining at an average of 1% a year, whereas internet revenues are growing at 17%; as a result, the share of voice is declining by an average of 3.5% a year.

Figure 5: MENA fixed revenues – breakdown per revenue stream



Note: Iran and Syria fixed revenue for 2010-2013 restated at 2014 exchange rates
Source: Pyramid Research; Arthur D. Little analysis

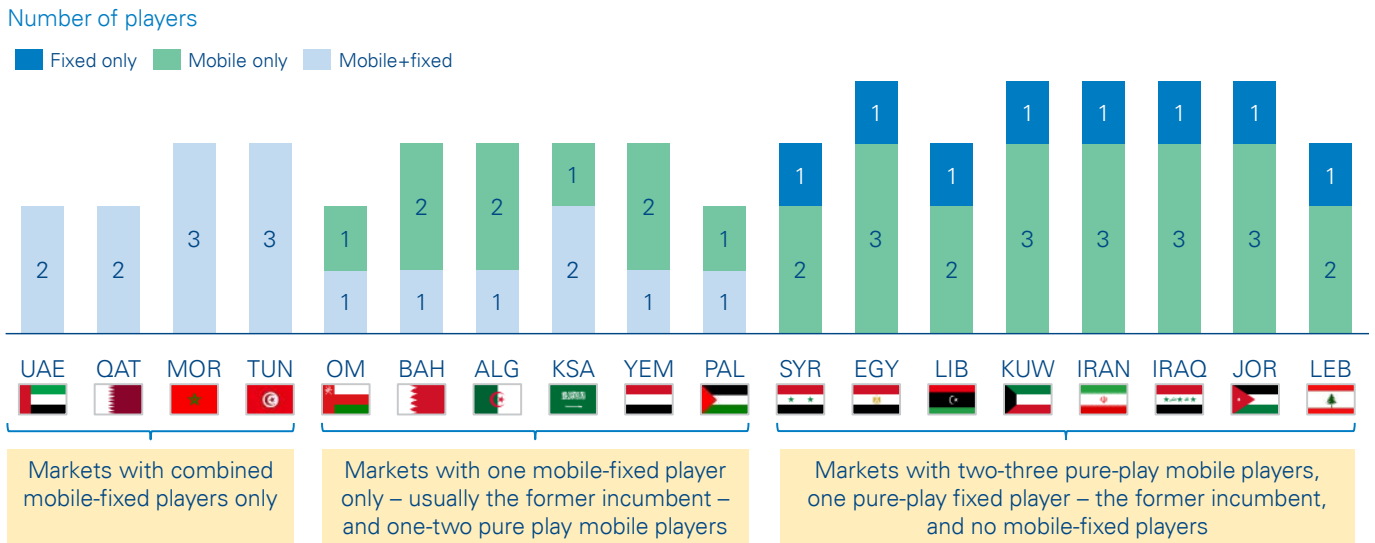
Relatively few telecom players own the MENA markets

Currently, three market structure exist in the MENA markets, and relatively few telecom operators compared to other regions. Markets around the region have between two and four telecom players, with two or three mobile players and one or two fixed players in each market⁴. Overall, three different market structures have been introduced:

1. Markets where all players offer both mobile and fixed services. Such markets include the UAE and Qatar in the Gulf region, and Morocco and Tunisia in North Africa.
2. Markets with one combined fixed and mobile player only and one or two pure mobile players. The fixed and mobile player is usually the former telecom incumbent. Such markets include Oman, Bahrain and Algeria. Saudi Arabia is the only exception, with two fixed and mobile players and one pure mobile player.
3. Markets with one pure fixed player – the former incumbent – and two to three pure mobile players. No players offering both fixed and mobile services are available. Such markets include Egypt, Jordan and Lebanon.

⁴ Excluding pure B2B fixed players

Figure 6: Current market structures in the Middle East and North Africa region



Note: Algeria Telecom operates mobile and fixed fully separated but is considered a converged player here
 Source: African Telecom News, eMarketer, Arthur D. Little

There are a series of regulatory elements that create a specific competitive environment

The level of competition has so far been enabled by a strongly regulated environment:

(i) Preference towards a lower number of telecom players subject to heavy tax levies and government royalties

Competition in the markets of the region was introduced significantly later compared to mature markets. Second mobile operators in the region appeared mostly in the first decade of the 21st century – as late as 2008 in the case of Qatar. Consequently, third licenses have been awarded in only a few situations. Currently, a MENA country has 2.6 mobile operators on average – similar to the US, which has two dominant operators, but different from Europe, which has 3.2 operators per country on average. European markets the size of Saudi Arabia, Egypt and Algeria often have four operators, whereas markets the size of Oman and the UAE usually have three operators.

Furthermore, newer entrants have typically been granted market exclusivity for different periods and services. In addition, there has been caution in introducing MVNOs in the region.

In the fixed market, there is less infrastructure and consequently less competition. Most markets have a single fixed provider – usually the former fixed telephony provider, which in some cases is still a pure-play fixed player, whereas in others is a combined mobile-fixed player. In the few markets that have more than one fixed player, privileges such as geographical

exclusivity have been granted to new entrants. On the other hand, government funding of a national broadband network has been limited so far.

At the same time, telecommunications players in the region are subject to heavier tax burdens than other companies:

- In many countries around the region, telecoms are subject to revenue share with the government, which reaches 15%. This is not common for other industries.
- At the same time, telecoms are subject to corporate income tax, which reaches 30–35%, including in countries that otherwise impose limited or no corporate taxes.
- On top of these, all telecoms pay the governments for the spectrum they are using, as well as partly bear the costs of import duties on telecommunications equipment.

As a result, telecom operators are often seen as an important source of government revenue around the region. In a contrasting approach, multiple consumer goods and services including utilities, fuel and staple foods are being heavily subsidized in many countries around the region.

(ii) Limited implementation of mobile number portability

Mobile number portability (MNP) is limited. MNP has still not been introduced in some countries of the region, such as Algeria, Tunisia and Jordan. Even in a relatively mature market, the UAE, MNP has only been recently introduced.

Figure 7: Factors affecting competition on mobile markets

	Gulf Cooperation Council					North Africa			Rest of region	
	UAE	Saudi Arabia	Bahrain	Oman	Qatar	Egypt	Tunisia	Algeria	Iran	Lebanon
# of mobile players	2	3	3	2	2	3	3	3	3	2
Number portability	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
MVNO availability	✗	✓	✓	✓	✗	✓	✓	✗	✗	✗
Foreign ownership	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗

Note: MVNO regulation existing in Bahrain, Egypt, Tunisia; currently no MVNOs launched
Source: Arthur D. Little analysis

Figure 8: Factors affecting competition on fixed markets

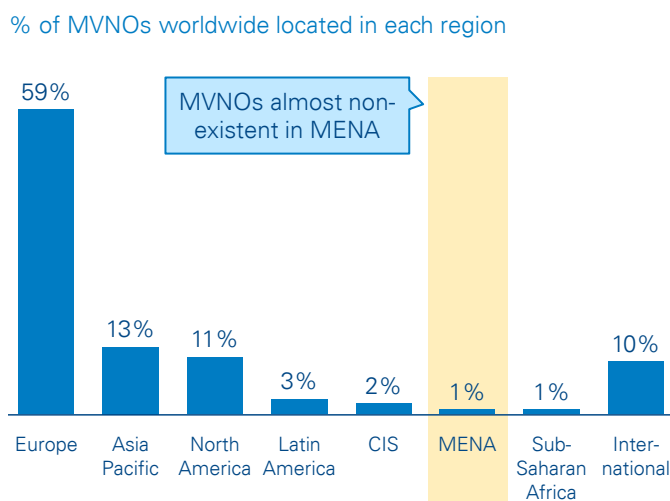
	Gulf Cooperation Council					North Africa			Rest of region	
	UAE	Saudi Arabia	Bahrain	Oman	Qatar	Egypt	Tunisia	Algeria	Iran	Lebanon
# of fixed players*	2	2 ¹	1	1	2	1	3	1	1	1
Gov. funded NBN rollout	✗	✗	✗	✓	✓	✗	✗	✓	✗	✗
Fixed access network sharing	✓	✓	✓	✓	✗	✓	✗	✓	✗	✗
Foreign ownership	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗

Note: Retailers buying from incumbent not counted as standalone fixed players; ¹Bravo Telecom not considered a full-blown fixed player
Source: BMI, African Telecom News, Marocopolis, Telecommunications Regulatory Authority of Bahrain, Communications Regulatory Authority of Qatar, Arthur D. Little analysis

(iii) Low number of MVNOs compared to other regions

Mobile virtual network operators (MVNOs) are largely absent in the region. Jordan and Oman are the only two markets that had functioning MVNOs before the recent MVNO launch in Saudi Arabia. As a result, out of more than 1,000 MVNOs active globally, only about 1% are based in the MENA region.

Figure 9: MVNO activity per region



Source: GSMA Intelligence

“MVNOs may surprise with an OTT offering with voice/messaging included, thereby avoiding the game of buying bulk minutes/messages from operators.”

Chief Strategy Officer of market challenger

(iv) Limited implementation of fixed network sharing

On the fixed markets, multiple countries around the region do not allow access network sharing. Qatar and Kuwait, for

instance, have not taken major steps towards implementation, whereas markets such as Saudi Arabia, Egypt and Jordan are already in the commercialization phase. In the UAE, arguably the most mature market in the region, negotiations for network sharing started in 2009. Multiple delays led to the two players resolving their differences after six years; consumers will have the option to choose their fixed providers in 2016.

(v) Restrictions on foreign ownership

Foreign ownership is restricted in some markets:

- In Algeria, maximum foreign ownership is 49%, and in the case of ownership change, the government has first refusal on a majority stake.
- The UAE negotiated exemption from WTO rules regarding foreign ownership until 2015.
- In Iran, the parliament voted to restrict foreign ownership of the second operator to 49% in 2005.
- In Kuwait, even though two of the players are partly foreign-owned, the government has a stake in both and 50% of the shares of each are listed on the stock exchange, reserved for Kuwaiti ownership only.
- In the fixed market, foreign ownership is not allowed in Lebanon.

(vi) Restrictions on over-the-top voice and messaging players

In addition to enabling limited competition in the sector, regulators in the region have limited disruption from emerging over-the-top (OTT) players.

As can be seen, protection has mostly been achieved through restrictions on provision of voice-over IP (VoIP) or outright blocking of messaging/content applications.

Figure 10: Selected regulatory measures affecting VoIP players

	Gulf Cooperation Council					North Africa			Rest of region	
	UAE	Saudi Arabia	Bahrain	Oman	Qatar	Egypt	Tunisia	Algeria	Iran	Lebanon
Unrestricted VoIP	✗	✗	✓	✗	✗	✗	✓	✗	✗	✗
Licensed VoIP operators	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✗
Fixed-line termination	✗	No data	✓	✓	No data	✗	✓	✓	✓	✗
Unfiltered internet content	✗	✗	✗	✗	✗	✓	✓	✓	✗	✓

Note: Licensed VoIP operators permitted in Algeria, license issuance suspended since 2010; no licensed operators in Saudi Arabia, Bahrain, Oman VoIP players provide international fixed calling only
Source: OpenNet Initiative; Reporters Without Borders; Arthur D. Little analysis

- In almost all MENA markets, VoIP can only be provided by a licensed operator. In some markets (UAE, Qatar), only incumbent mobile operators have been granted licenses; in others (Algeria), license issuance has been suspended. There have been continuous crackdowns against unlicensed VoIP providers – ISPs or call centers – around the region.⁵
- The recently introduced WhatsApp calling feature is blocked by both operators in one of the GCC markets, and multiple OTT apps have previously been blocked – such as Viber in Saudi Arabia, the UAE and Iran in 2013.

- Apple’s FaceTime is not preinstalled in devices sold around the region, which effectively bans FaceTime for the vast majority of Apple users.

“Regulation is stricter in the MENA region than elsewhere, better shielding the telecom industry. There are clearly less operators than in other markets, and some services are restricted.”

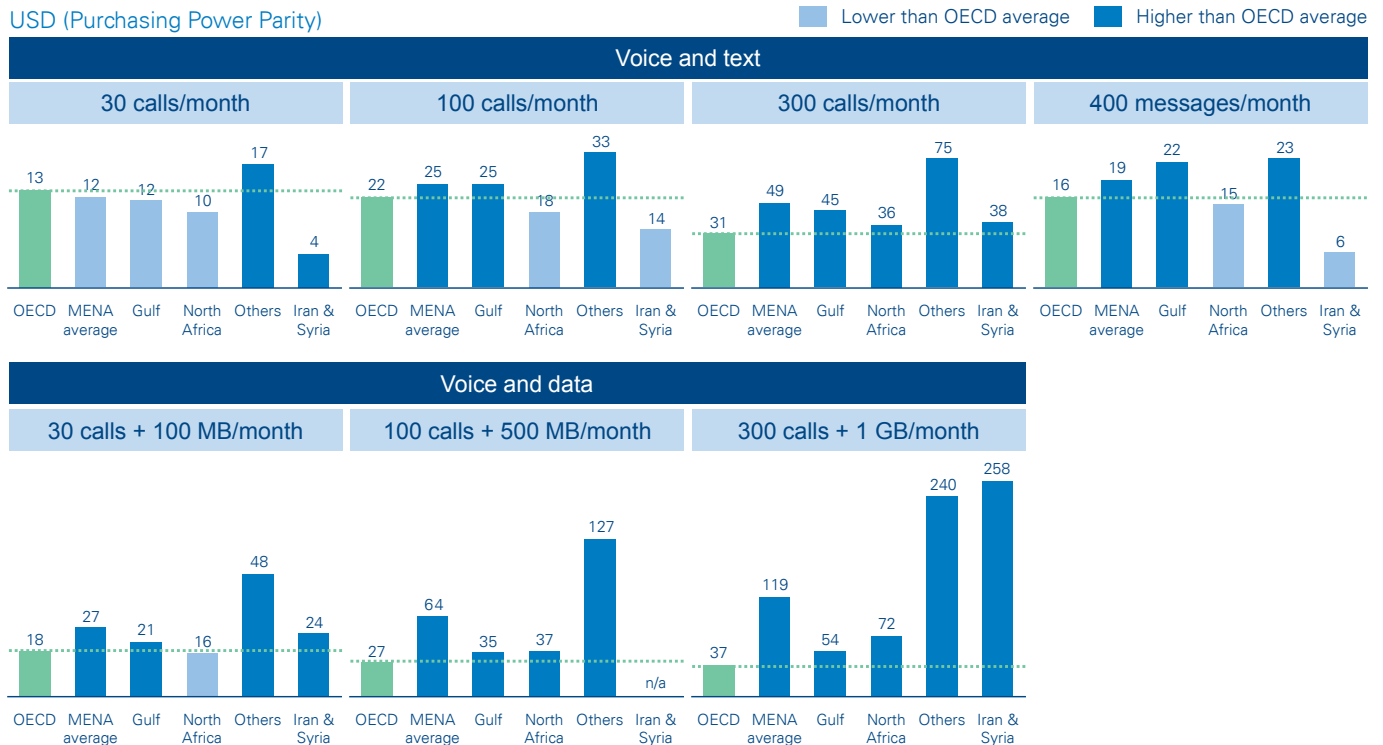
CSO of market challenger

With a few exceptions, prices of mobile and fixed services in the region are higher than in developed markets

According to the AREGNET Price Benchmarking Study published in December 2015, the average prices of mobile and fixed telecom services in the MENA region are higher than the average prices in the developed markets of OECD.⁶ The price difference is higher for larger packages, including those bundling mobile voice and data, where MENA prices are up to 2–3 times higher.

At the same time, using our regional grouping of the MENA markets allows us to see a more nuanced picture of prices around the region, as shown in Figure 11. Prices in North Africa are relatively lower, in particular for voice – compared to both

Figure 11: Mobile prices breakdown per sub-region – June 2015



Source: AREGNET Price Benchmarking Study, 2015; Arthur D. Little analysis

⁵ In the UAE, for instance, the telecoms regulator prohibits all VoIP services from operating independently of the two national telco players, du and Etisalat.

⁶ Using OECD as proxy.

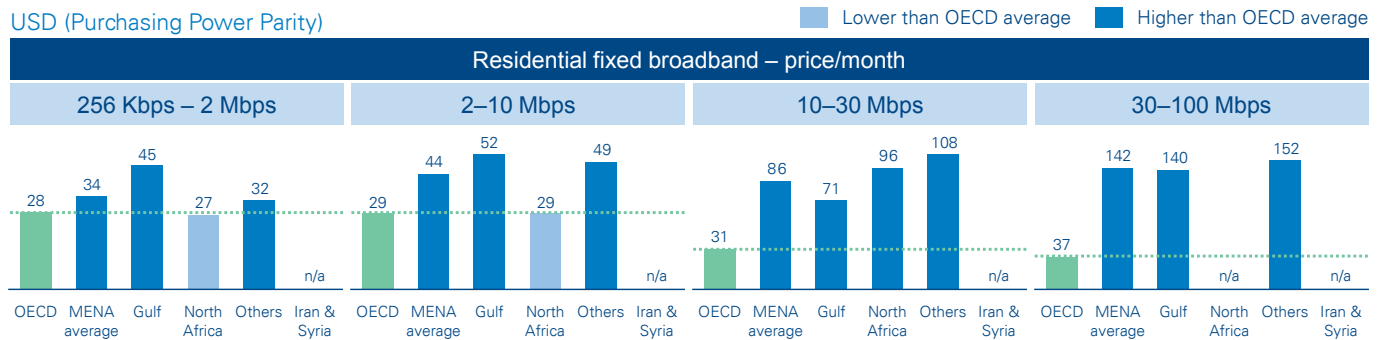
the rest of MENA and the developed markets. Possible reasons for this could include the relatively higher competitive intensity, lower purchasing power of the population, European-style regulation with relative lack of restrictions on OTT services, special taxation regimes and retail price regulation. Conversely, for the GCC prices show less fluctuation, on average being higher than the OECD benchmark in both voice and voice-data bundles.

This could possibly be explained, among others, by the limited number of players and the higher purchasing power of significant segments of the population. Prices in the “Rest of the region” group are consistently highest, possibly due to their lower market maturity and sometimes limited physical infrastructure. These higher prices could make telecom services in the GCC more susceptible to OTT disruption. This results, among others, in lower penetration of mobile services.

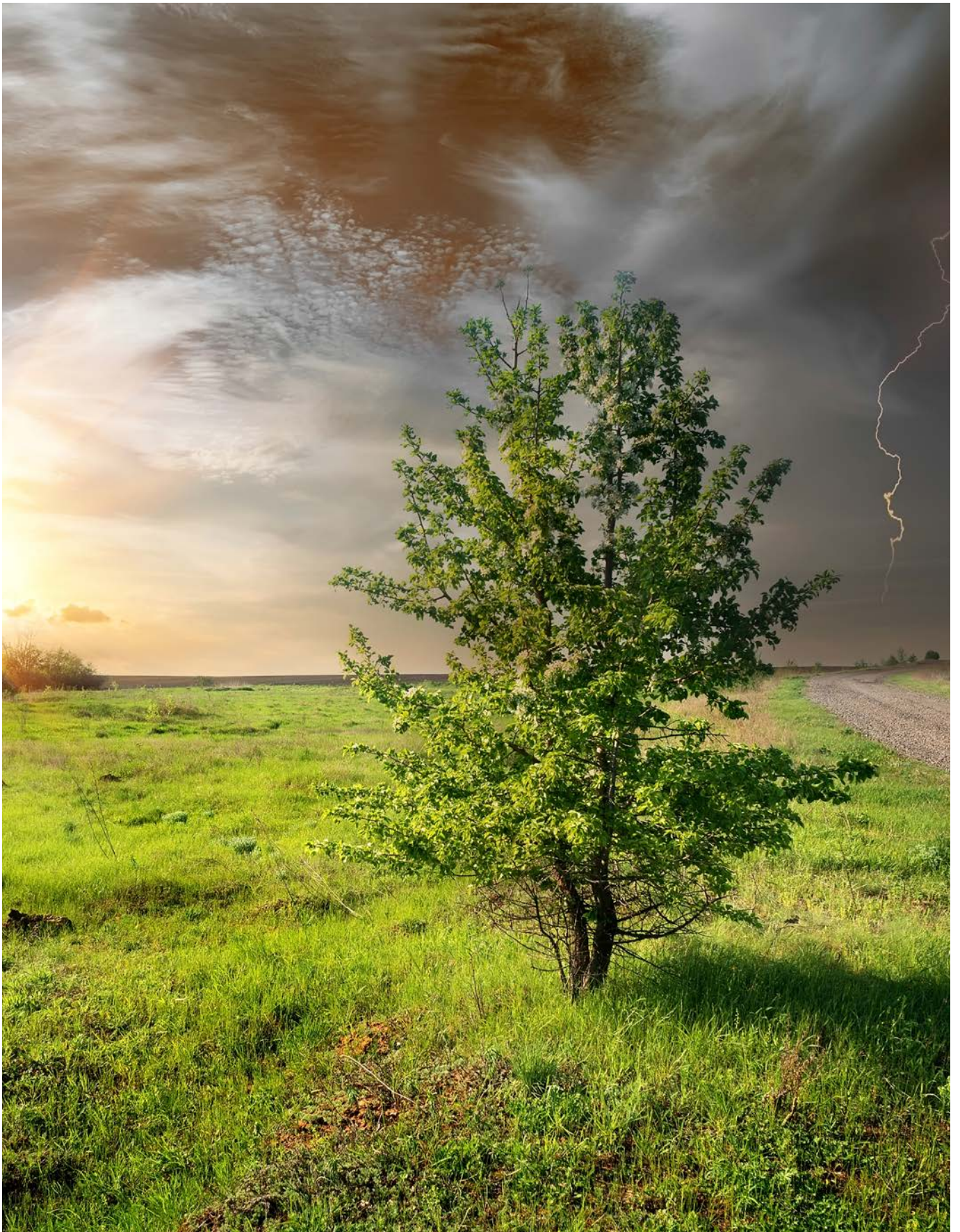
A similar picture is observed in the fixed market, both on an aggregate level and within the regional groups. Fixed prices in the region are higher than those in the developed markets, both for consumers and business users. The higher the speed, the bigger the gap, with prices for the fastest connection – 3–6 times higher than in developed markets.

Within the regional groups, practically everywhere fixed broadband prices are higher than in developed markets. In North Africa consumer prices for the slowest speeds are on par with developed markets, with prices for high-speed broadband and enterprise significantly (2–3 times) higher. In many of these markets with lower purchasing power high-speed fixed broadband is still somewhat of a luxury. GCC prices are consistently higher; with fixed access network sharing still underway in most markets, one reason for this could be the reduced competition. Regardless of the market, the higher the speed, the higher the price differential with OECD.

Figure 12: Fixed broadband prices breakdown per sub-region – June 2015



Source: AREGNET Price Benchmarking Study, 2015; Arthur D. Little analysis



2. Digital market dynamics will eventually prevail

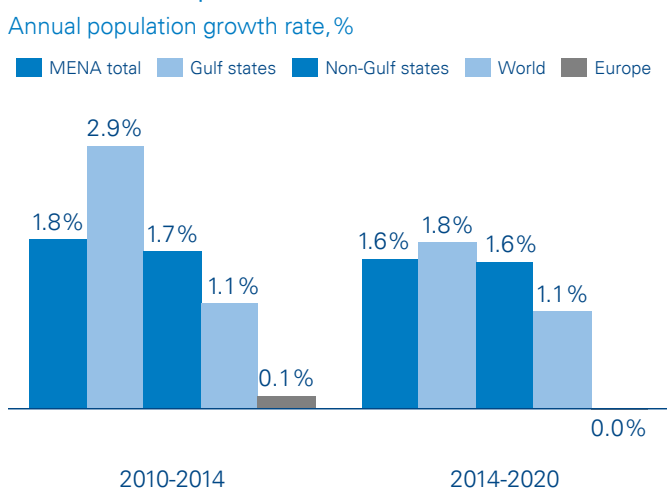
In this chapter we explore changes that we expect to see in markets around the region. We believe that the market environment will change in the coming years, becoming more hostile to operators for a number of reasons. Furthermore, we show initial proof of revenue disruption from over-the-top (OTT) services in some markets.

Growth has largely been fueled by population growth – which is slowing down

Between 2010 and 2014, the countries in the MENA region posted some of the highest population growth rates in the world. For the region as a whole, the rate was 1.8% p.a. compared to the worldwide average of 1.1% and European average of 0.1%.

Growth in the GCC was especially high – at 2.9% p.a.⁷ The main driver has been demand for expatriate workers fueled by the booming local economies, but national populations have also grown at twice the global average rate. Non-GCC states for their part have posted still-significant average population growth of 1.7% for the past five years.⁸ As a whole, the region added more than 28 million people to its combined population. Partly as a consequence of population growth, mobile subscriptions have grown at a very healthy 7.1% p.a.

Figure 13: Evolution of MENA population growth in comparison to Europe and the world



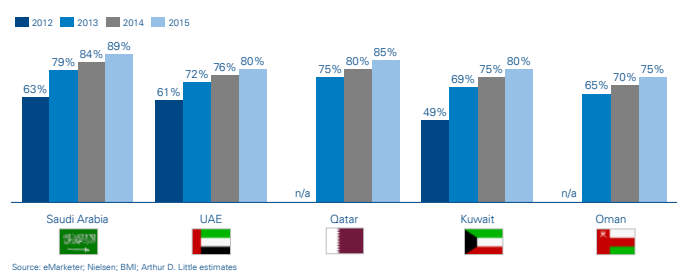
Source: World Bank; Arthur D. Little estimates

For the next five years population growth in the region is forecast to slow down to 1.6%, even though it will still outpace both the world (1.1%) and Europe (0.0%). Going forward, we expect this to slow down the rate of mobile subscriptions growth to 2–4% annually due to the combined effects of market saturation and lower population growth.

Smartphones have become the norm

The region now claims some of the highest smartphone penetration rates in the world, reaching 75–85% in markets such as Saudi Arabia, Qatar, Kuwait and the UAE. At the same time, smartphone penetration remains underwhelming in the non-GCC countries of the MENA region, in some markets hovering around 10–20%. The increase in smartphone penetration is inevitable, aided by the constantly decreasing average device-selling prices.

Figure 14: Smartphone penetration in GCC countries

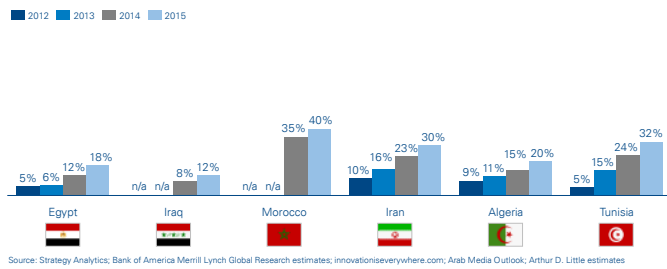


Source: eMarketer; Nielsen; BMI; Arthur D. Little estimates

This penetration will go hand in hand with increased OTT usage despite the various restrictions described, and in particular in markets where there are such no restrictions such as Algeria and Tunisia. Even at the current low penetration level, our survey indicates that there has been impact from VoIP substitution for international calls.

⁷ Oman and Qatar have posted the highest growth rates at 8.8% and 6.7% p.a., respectively.
⁸ Lebanon and Palestine have posted the highest growth rates at 3.4% and 2.9% p.a., respectively.

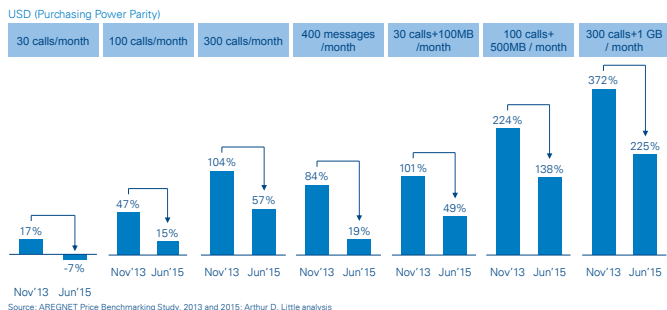
Figure 15: Smartphone penetration in non-GCC countries



Price differences with developed markets are falling fast

The price differences between MENA markets and developed OECD markets discussed in Chapter 1 have changed quite dramatically since the last edition of the AREGNET Price Benchmarking Study in 2013. Over the span of 18 months, the price difference has been cut almost in half. For the smallest mobile packages – 30 calls/month, the average prices in the MENA markets are already lower than in developed markets. For other small packages such as 100 calls/month or 400 messages/month, the difference in the average prices is currently minimal, at ~15-20%, compared with ~50-80% in November 2013.

Figure 16: Evolution of the difference between MENA and OECD mobile prices – Nov, 2013 and Jun, 2015



Regardless of restrictions, OTT voice and messaging services have found their way to users

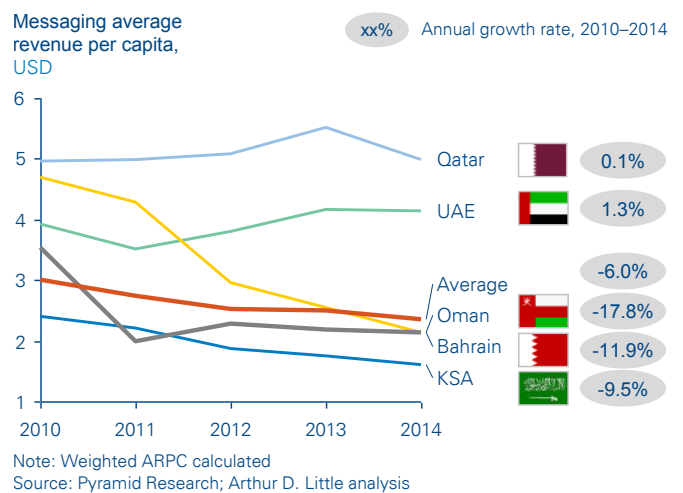
In various markets, messaging and voice revenues have already been exposed to the substitution effect of OTT. Restrictions have been applied to varying degrees, on varying applications and different periods of time. Furthermore, users in the region have become savvy at using illegal virtual private networks (VPNs) on their smartphones in order to circumvent any restrictions. As a result, OTT usage is already significant in the MENA region.

Messaging revenue decline is clearly visible

In order to quantify any OTT effect on operator revenues, we analyzed the evolution of messaging revenues in five GCC markets.

Across the five markets, average messaging revenue per capita fell by 6.0% p.a. from 2010 to 2014. This drop has been especially pronounced in Oman (-17.8% p.a.) and Bahrain (-11.9%), and slightly more subdued in Saudi Arabia (-9.5%). While this drop in revenue can largely be attributed to a drop in prices, and is partly mitigated by higher usage in messages per capita per month, Bahrain and Oman are the only two markets where there has been a sizeable drop in the volume of messages sent. The total number of messages has dropped by 31% in Oman and 26% in Bahrain, despite the sizeable increases in the subscriber base in both countries.

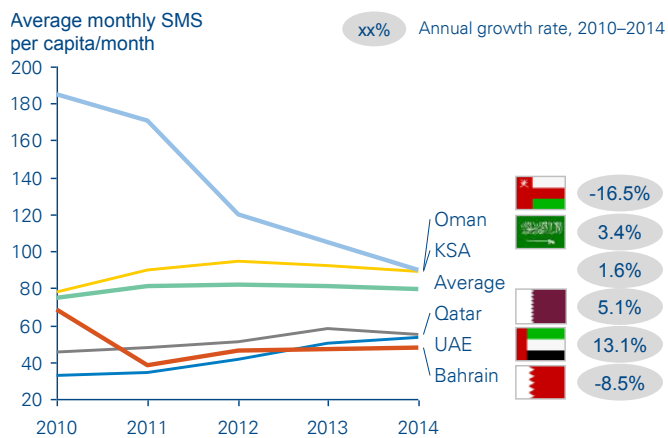
Figure 17: Messaging revenue per capita – selected markets



As a result, in Oman the average number of messages per capita per month has dropped from 185 to 90 over four years, whereas for Bahrain the drop has been from 68 to 48 messages per month. These are also two of the markets where there have been few bans on OTT messaging, as a result of which usage is strong. For example, WhatsApp has been one of the most downloaded apps in Bahrain – it was the most downloaded app in Apple’s App Store for an uninterrupted six-month period from January to June 2013; it has remained in the top 10 since then.

9 Markets that when combined represent only 3.3% of the total MENA mobile market.

Figure 18: Average monthly SMS per capita

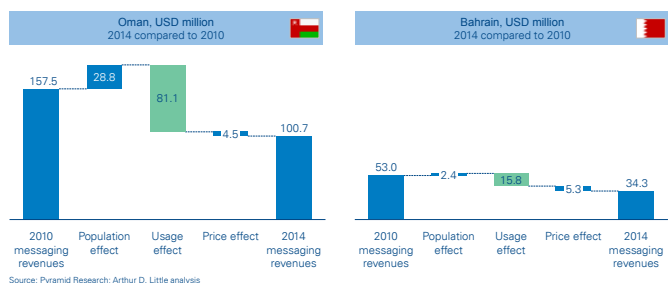


Note: Weighted number of messages per capita calculated
Source: Pyramid Research; Arthur D. Little analysis

Our analysis shows that operators in Bahrain and Oman⁹ have lost USD 97 mn in messaging revenues in 2014 compared to 2010 due to lower usage, holding other factors such as pricing and number of users constant. For both markets, about one-third of messaging revenue has been lost, assuming the market would have been flat otherwise. Just in these two countries, the cumulative impact over four years amounts to USD 291 mn.

Such decline in revenues per capita will be further exacerbated by market saturation. We forecast that mobile penetration will continue to increase in the short to medium term, before beginning to drop after 3-4 years. Population growth will slow down too, further limiting potential.¹⁰ Overall, we expect the region to add 11-22 mn subscribers per year until 2020 – compared to 27 mn per year for 2010 to 2014. This will mean declines in overall messaging usage and revenues for all markets in the medium term.

Figure 19: Impact of messaging revenue loss – Oman and Bahrain



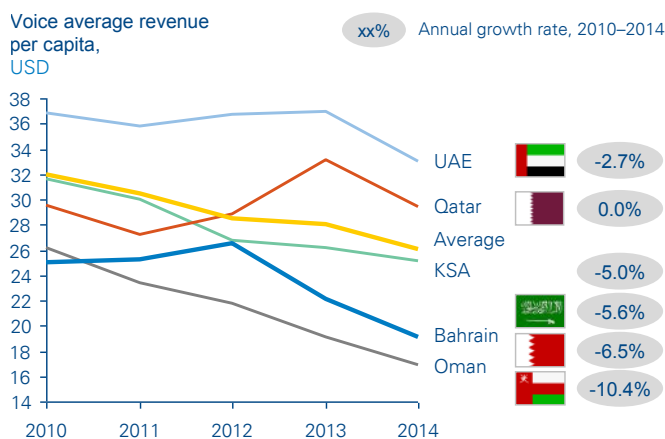
Source: Pyramid Research; Arthur D. Little analysis

Voice revenue decline has only just begun

In addition to experiencing messaging revenue declines, telco operators in the GCC have also been exposed to voice revenue

declines. In the five GCC markets we analyzed, average revenue per capita (ARPC) from voice usage has declined at a rate of 5% p.a. between 2010 and 2014. The sharpest declines have been again observed in Oman – 10.4% p.a., and Bahrain – 6.5% p.a. The main reason has been similar to messaging – relatively low interference with the operation of OTT voice players in these markets.

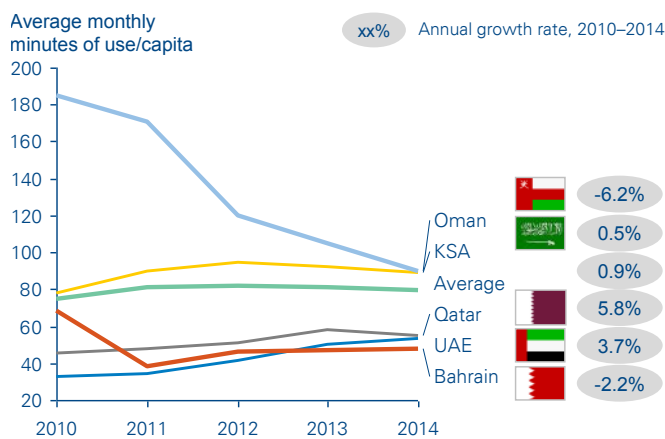
Figure 20: Voice revenue per capita – selected markets



Note: Weighted ARPC calculated
Source: Pyramid Research; Arthur D. Little analysis

The same two markets have posted declines in average minutes of use per capita between 2012 and 2014, Oman and Bahrain. Since then, average minutes of use per capita have dropped by 6.2% and 2.2% p.a.

Figure 21: Voice usage per capita – selected models



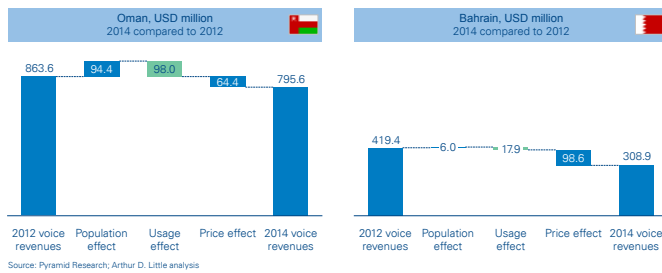
Note: Weighted number of MOU per capita calculated
Source: Pyramid Research; Arthur D. Little analysis

Our estimate is that operators in Oman and Bahrain have lost voice revenues amounting to USD 116 mn in 2014 compared to 2012, or around 9% of the 2012 level. Apparently, the trend

¹⁰ In Oman, for instance, population growth is forecasted to decrease drastically, from 8.8% to 2.4% p.a., for the next five years.

is unfolding more slowly – but is nevertheless relentless in our opinion.

Figure 22: Impact of voice revenue loss – Oman and Bahrain



Key regulatory and competitive changes might be coming to the region

Regulators around the region have continuously declared their intentions to increase competition in the telecom sector and support the digital society. As a result, multiple aspects of the regulatory landscape are likely to change.

New players are likely to emerge

Regulators have considered granting new mobile licenses for third operators in some countries such as the UAE and Oman, even though no actions have been taken. Similarly, fourth operator licenses have been discussed in Iraq and Morocco. In Egypt, a fourth player is expected in the face of the fixed incumbent operating as an MVNO. MVNOs, which are regulated by specific and distinctly separate regulations, are likely to appear in some of the markets in the region where there currently are none – in particular Bahrain and Tunisia. All of these developments will increase competition in the respective markets.

Mobile number portability will become more widespread

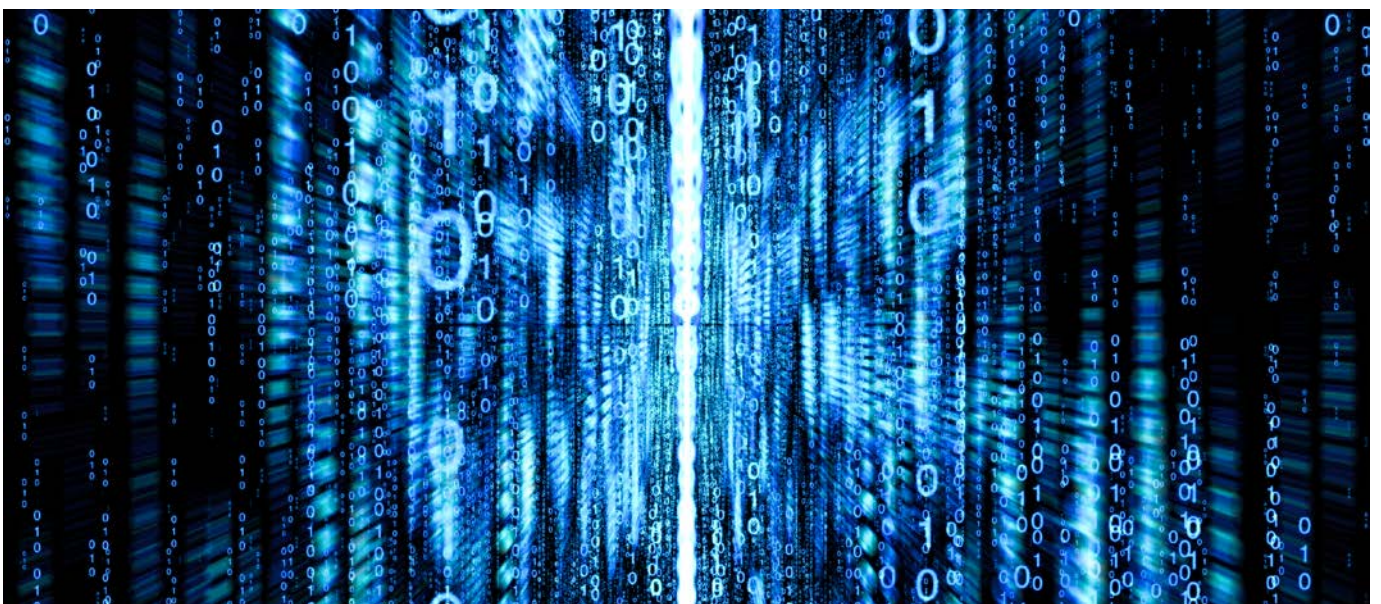
A number of markets are considering mobile number portability (MNP) introduction. After multiple delays MNP is approved and will be introduced in Tunisia in 2016. The UAE already introduced it in 2014. Another market lacking the service, Algeria, currently has no MNP regulation in place, but it was debated in 2013 and will likely be introduced. Similarly, in Jordan, MNP has been debated since 2004; however, the country recently decided not to go ahead until an evaluation of the level of competition in the market was carried out. In all of the markets affected, **the introduction of MNP will increase competition and churn.** MNP has the impact of rebalancing the operator size, usually to the benefit of second and third operators and to the detriment of the biggest operator. Expected impact on portability introduction around the region would depend on the process employed, in particular process duration and charges; however, experience shows it could be within 4-7%.

Fixed access network sharing will increase competition in the fixed market

As fixed access network sharing progresses in markets such as Saudi Arabia, Egypt, Jordan and the UAE, and with steps towards its introduction in other markets of the region possible, competition in the fixed markets will intensify, with possible impact on the prices paid for fixed services.

“Standard voice offerings will continue to coexist alongside the OTT voice offers due to quality, reliability and security.”

Chief Strategy Officer of market challenger



3. Market forecasts for the MENA region, 2015–2020

In this chapter we present our market forecasts for four key markets around the region – Saudi Arabia, UAE, Morocco and Egypt. Across all markets we forecast strong growth in data usage and rebalancing of revenue mix towards data revenue. Along the way, we see potential for market saturation and downturn, in particular for the GCC markets.

We identified four distinct groups within the region based on their usage of mobile and fixed data. We call these groups digital leaders, attackers in fixed, mobile-first, and catching up, respectively, and use them in order to analyze the impact of OTT services and the overall development paths for the telecom markets in the region in more detail.

Digital leaders

These are countries that have both very high mobile usage and high fixed broadband penetration. Mobile penetration in countries within this group exceeds 150%, and more than half of households have fixed broadband – even though fixed infrastructure deployment might still continue. Consumers in these countries are the closest to those in developed markets in Europe, North America and East Asia in terms of data usage – always online, both at home and on the road. Smartphone penetration is very high, as is mobile data usage. This group includes Bahrain, the UAE and Qatar.

Attackers in fixed

These are markets with very high mobile usage that are working hard to put in place adequate fixed infrastructure to speed up their digital journeys and offload mobile networks. Similar to the digital leaders, they have very high smartphone penetration (>150%) and mobile data usage, as well as relatively low (<50%) but growing fixed broadband penetration. The countries in this group include Bahrain, the UAE and Qatar.

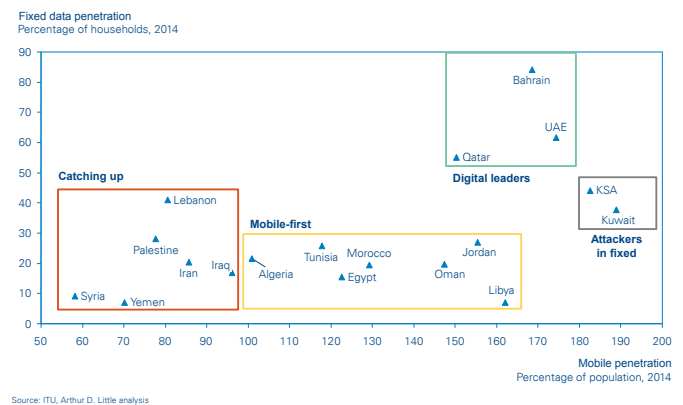
Mobile-first

These are markets where Internet availability is relatively limited, and the primary mode of access is mobile. Mobile penetration in this group is relatively high, around 100% or higher; mobile data usage is still low, though, and fixed broadband infrastructure is patchy. Also, smartphone penetration is growing quickly, but is still significantly lower than in the previous two groups. Many of these countries are focusing on fixed broadband development, but starting from a low base and will need time and investment to catch up. Markets in this group include Oman, Jordan, Morocco, Libya, Tunisia, Algeria and Egypt.

Catching up

These are markets with very limited fixed broadband infrastructure and mobile penetration as low as 60%. Mobile data usage is nascent, and smartphone penetration is limited. Fixed broadband, where available, is usually priced out of reach for the vast majority of the population. Finally, these are markets with frequent political instability and military conflicts that take a further toll on the physical infrastructure, both fixed and mobile. This group contains Iran, Iraq, Palestine, Yemen, Lebanon and Syria.

Figure 23: Country clusters by data usage



Key market forecasts

Certain similarities in the markets are evident. Populations are going to increase, which will have a positive impact on telecom revenues. Data usage will increase significantly, but this effect will be partially offset by substantial price decreases. Voice prices will also decline and the significance of text messaging will decrease, demonstrating the detrimental impact of OTT messaging. All of these will lead to rebalancing of revenue from the traditional voice and text to data services.

In order to assess the expected impact of OTT messaging and voice on mobile revenues, we have developed forecasts and identified the mobile growth drivers for four selected markets in

the region – the UAE (a digital leader), Saudi Arabia (an attacker in fixed), Morocco and Egypt (both mobile-first).

Unless otherwise stated, we use 2014 as a baseline to forecast 2020 market end states. Also, for each key mobile market, two forecasts have been created – namely one realistic and one low outlook – giving us ranges for voice, SMS and data revenues.

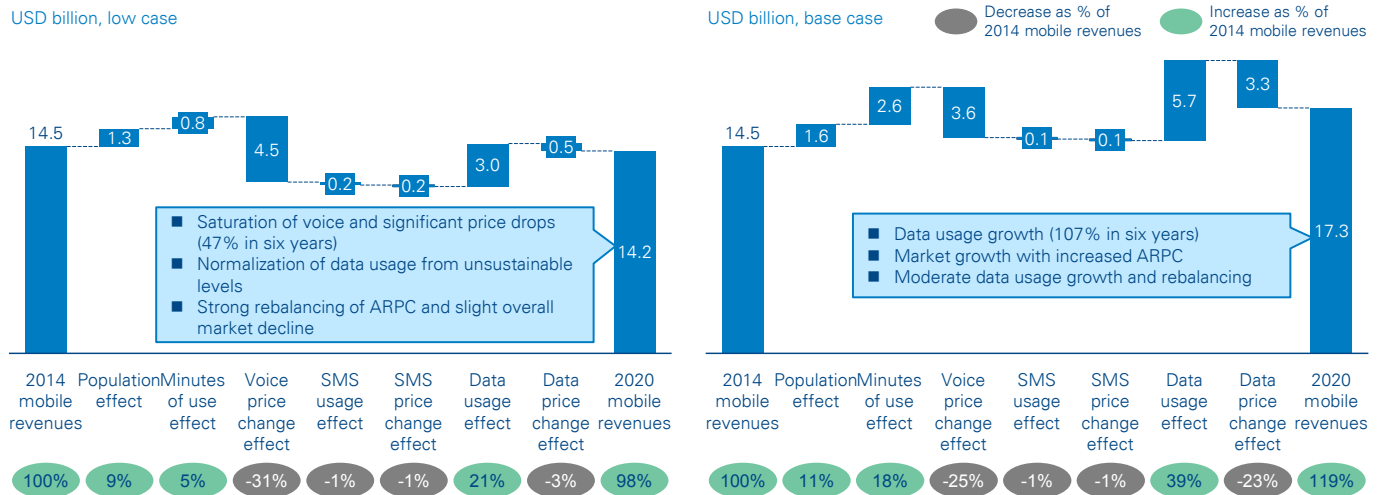
Saudi Arabia – moderate increase

Saudi Arabia is the largest telecom market and economy in the region. The key factors underlying the Saudi market development in the coming five years are as follows:

- Population increase – the Saudi population will increase by almost 3 mn people by 2020. We estimate this will lead to **3.3–6.8 mn new mobile subscribers**. This increase will be on par with or higher than recent years, which saw a clampdown on illegal workers that reduced mobile subscribers by at least 1 mn. Should such initiatives continue, the number of subscribers will swing towards the lower end of our forecast. In any case, population growth will be a major growth driver, bringing in USD 1.3–1.6 bn in cumulative revenue in 2020.
- Moderate increase in voice usage – the Saudi voice market is not saturated yet, and growth of more than 20% in average minutes of use has been posted since 2010. We expect moderate growth to continue at least until 2020, with peak usage further in the future. As a result, average minutes of use per capita will increase from 300 to 325–390 in 2020, leading to a cumulative revenue increase of USD 0.8–2.6 bn. Therefore, **we do not expect that OTT voice will have a dramatic impact over the mentioned time horizon in volume terms.**

- Significant drop in voice unit price – as voice usage continues to increase, **we expect accompanying per-minute price decreases** as operators include ever-larger voice packages in bundles at constant prices. This is where OTT will really take its toll, as operators will do their best to counter OTT voice usage with ever-cheaper minutes. As a result, price decreases will more than offset the revenue effect of increased volume. Average price per minute is expected to drop by 30–45%, resulting in cumulative losses of USD 3.5–4.5 bn by 2020.
- Decline in SMS usage and prices – after a peak in 2012, text volumes started to decline. We expect this trend to continue as OTT messaging proliferates; therefore, we forecast that a **decline in both messages sent (12–27% less) and average price per message (32–47%)** will lead to a cumulative revenue loss of USD 250–370 mn.
- Significant increase in mobile data usage – up until recently Saudi Arabia had some of the highest data usage in the world, heavily incentivized by unlimited data plans with no caps. As a result, the Kingdom likely has similar usage to Finland – the country with the highest per-SIM data usage globally of ~3GB monthly, where players also offer unlimited, uncapped data plans. However, subscribers in Saudi Arabia tended to overuse these plans by sharing dongles, not offloading data to Wi-Fi even when available, etc. As a result, operators have scaled down on such plans, which will have a **short-term slowdown impact, and we may even see a decline in mobile data usage**. In the medium term, however, **growth will resume at a moderate rate** given the high starting base.
- Accompanying the data usage slowdown, data price drops will also slow down. The effect of lower data usage at the same prices will also likely increase the average per-

Figure 24: Saudi Arabia market forecasts and growth levers, 2015-2020



Source: Arthur D. Little analysis

megabyte price in the very short term. In the medium term, though, there will still be sizeable price drops from the current levels, resulting in revenue declines of USD 0.5–3.3 bn.

Overall, the impact on the Saudi market by 2020 might vary between a marginal drop of USD 300 mn and a moderate increase of USD 2.7 bn (2.9% annual growth for the period).

UAE – growth or decline?

The UAE is the most advanced of the telecom markets analyzed, despite a level of regulatory protection for operators. The key factors underlying the market development in the coming five years are:

- Moderate population growth – the UAE population is forecast to increase by about 1.1 mn by 2020 – a 20% slowdown compared to the period since 2010. As a result, **we expect mobile subscriptions to increase by a total of appr. 3 mn** – a marked slowdown compared to recent years, which saw an increase of 5.6 mn subscribers. This will be a moderate growth driver for the telecom market, which we expect to bring in USD 0.5–0.6 bn of additional revenue in 2020.
- **Slight to moderate decline in voice usage** – average minutes of use have been on a downward trend since 2011, so far offset by the increase in subscribers. We expect that the UAE voice market will be fully saturated and start

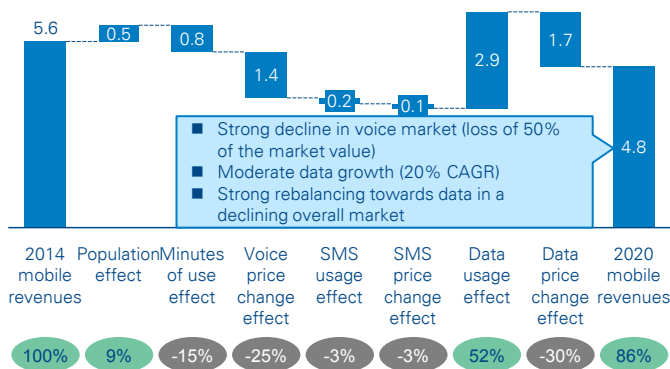
declining, with a revenue drop ranging from USD 100 mn to USD 800 mn.

- **Significant drop in voice unit price** – similarly to Saudi Arabia, we expect per-minute price decreases. Average price per minute is expected to drop by 35–45%, resulting in the loss of USD 1.1–1.4 bn.
- Decline in SMS usage and prices – We expect strong **drops in both total messages sent (15–27% less) and per-message prices (35–47%)**, which will lead to a combined revenue loss of USD 200–300mn in 2020.
- Significant increase in data usage – The UAE already has high data usage, but we expect further **significant increases, which will keep the country’s users among the most data-hungry in the world**. We expect average data usage per capita to reach 9–11 GB by 2020, leading to an increase in data revenues of USD 2.9–4.1 bn.
- **Data volume increases will be partially offset by sizeable price drops**. We expect average per-megabyte prices to fall by 40–55%, leading to revenue declines of USD 1.7–2.9 bn. As a result, overall data impact on the market will be ~ USD 1.2 bn.

We expect the combined effect of all growth levers on the UAE market to vary between a moderate drop of USD 800 mn and a small increase of USD 300 mn (6% increase from 2014).

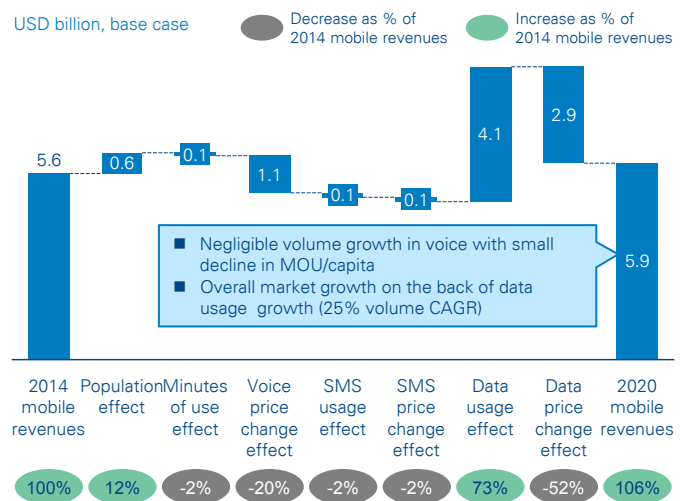
Figure 25: UAE market forecasts and growth levers, 2015-2020

USD billion, low case



Source: Arthur D. Little analysis

USD billion, base case



Morocco – some growth left

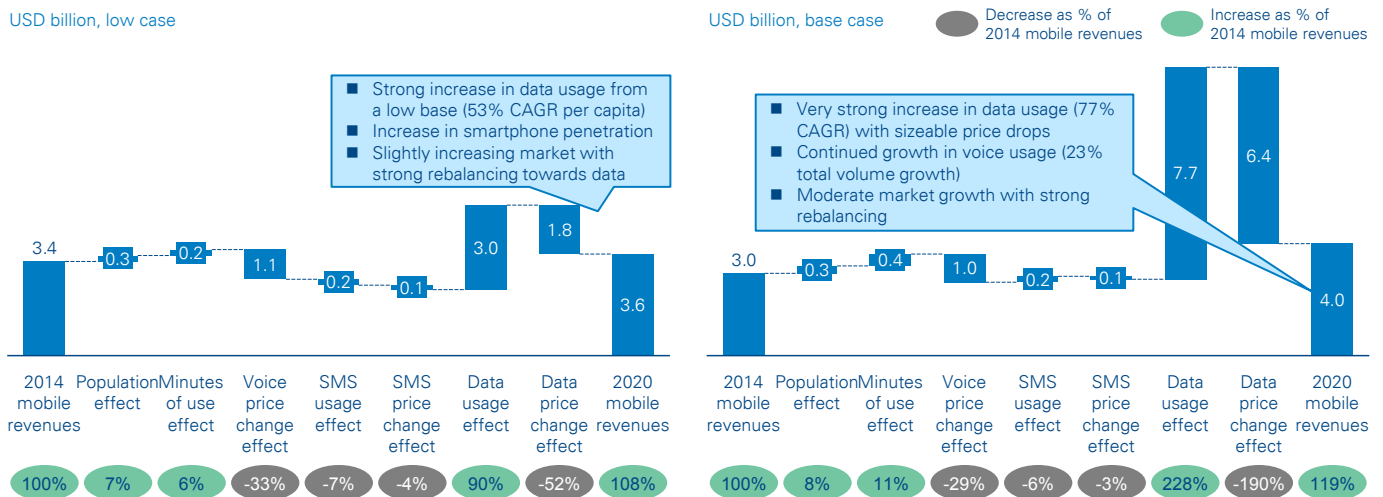
We expect that the key factors underlying the Moroccan market development in the coming five years will be as follows:

- Moderate population effect – the Moroccan population is forecast to increase by 2.5 mn, whereas **mobile subscriptions will grow by 2.5–5.5 mn as a result of a slowdown in multi-SIM usage**. Similar to other markets, we expect the rate of subscriber addition to significantly decline compared to recent years (from 2.9 mn to 0.45–0.9 mn per year). By 2020 this increase will drive ~USD 0.3 bn in additional revenue.
- Moderate increase in voice usage – the voice market is still growing, and the imminent threat of VoIP substitution is somewhat limited due to lower smartphone penetration. **We expect the Moroccan voice market to peak around 2019–2020**. In the meantime, we expect total minutes of use will increase by 16–23%, increasing voice revenue by USD 200–400 mn.
- **Significant drop in voice unit price** – as in other markets, we expect voice volume increases to come at unchanged prices, effectively reducing price per minute. We forecast drops of 33–40%, leading to revenue loss of USD 1–1.1 bn in 2020.

- The OTT impact in Morocco is felt strongly in SMS, with total number of messages in the country falling ~40% on an annual basis in 2015. As a result we expect revenue losses of ~ USD 200 mn, coupled with declining prices per message.
- Significant increase in data usage – like in other markets, increased data usage will be a major driver of growth. The starting base is particularly low; therefore, we expect **10- to 20-fold increases in average data usage per capita**, which will lead to a tremendous revenue effect of USD 3–7.7 bn in 2020.
- Data price drops – naturally, growth in data volumes will be accompanied by data price declines. **We expect the per-megabyte price to drop by 55–80%**, largely offsetting the revenue impact of increased usage. The revenue lost due to the price declines is forecasted to be USD 1.8–6.4 bn. As a result, we expect the combined impact of data will be a revenue increase of around USD 1.3 bn.

Overall, we expect the Moroccan market to grow, with a low case of an increase of USD 400 mn revenue and a realistic case of an increase of USD 800 mn – an increase of 23% over the current level.

Figure 26: Morocco market forecasts and growth levers, 2015-2020



Egypt – the future is bright

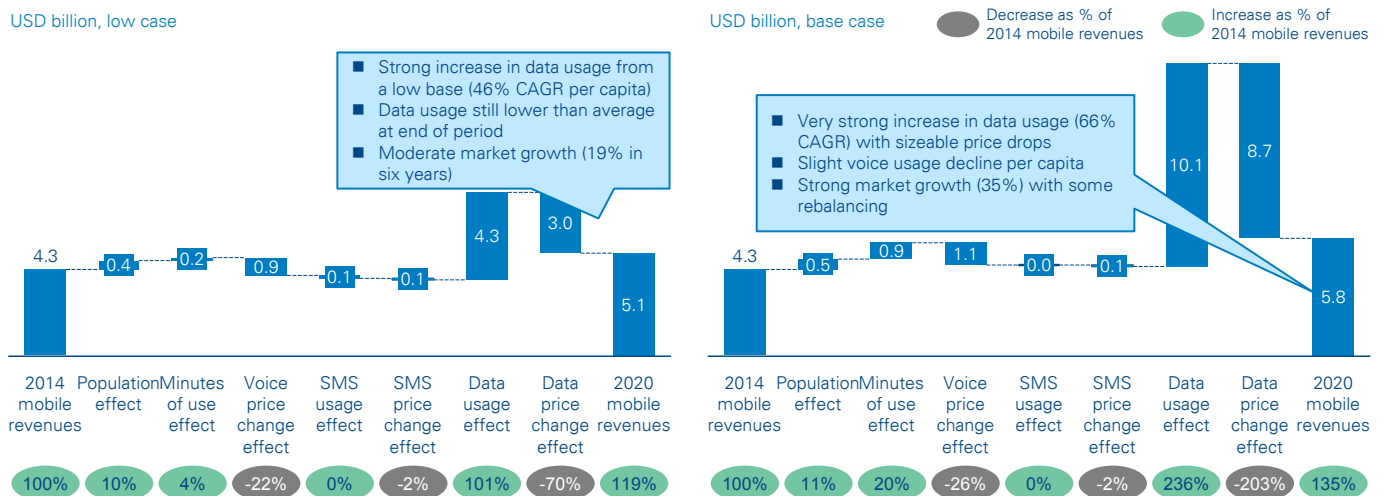
Egypt is the most populous country in the region; however, low ARPC is a major weakness for the market. We expect that the key factors underlying the Egyptian market development in the coming five years will be as follows:

- Moderate population effect – the Egyptian population is forecast to increase by more than 7.5 mn people by 2020; this will be a key factor in the **increase in mobile subscribers of 13–27 mn**. This will translate to additional revenues of USD 400–500 mn.
- Moderate increase in voice usage – **voice is still on an upward trajectory, and we expect it to peak around 2017–2018** before beginning to gradually decline. Overall volume in 2020 is expected to be 15–36% higher than in 2014, which will translate to additional USD 200–900 mn at the end of our forecast horizon.
- Significant drop in voice unit price – Per-minute prices are already very low; however, we forecast **further drops in effective price per minute as usage increases**. A drop of about 25% per minute is expected to lead to revenue losses of USD 0.90–1.1 bn in 2020.

- Minimal impact of SMS volume and prices – similar to voice, SMS pricing is already very low. We expect that a moderate price decline, potentially coupled with a limited drop in volumes, will have a combined impact of USD 100–150 mn. As in Morocco, **OTT impact on SMS will be subdued in the coming years**.
- Significant increase in data usage – currently mobile data usage is limited, with smartphone penetration estimated at 12% in 2014. We expect Egypt, starting from the lowest base, to post **very high data growth rates, increasing usage per capita 10–20-fold**. The impact, other things equal, would be staggering revenue gains of USD 4.3–10.1 bn – higher than the total current mobile market.
- Enormous drop in data prices – as can be expected, the growth in data usage will go hand in hand with a **drop in per-megabyte prices by 65–85%**. This will largely make up for the growth in usage, resulting in a decline of USD 3–8.7 bn in 2020. As a result, the combined impact of data is expected to be a revenue increase of USD 1.3–1.4 bn.

In any case, **we expect a positive future for the Egyptian mobile market, with growth of 19–25% by 2020.**

Figure 27: Egypt market forecasts and growth levers, 2014-2020



Source: Arthur D. Little analysis

GCC markets are most exposed

Overall, the impact of continued OTT disruption in the analyzed markets will not be uniform. In markets such as Morocco OTT services are already taking their toll, but not enough to stop the continued market growth. In Egypt we expect OTT services to not cause any downturn in the medium term as the market continues to mature. However, in the more developed GCC markets such as Saudi Arabia and the UAE, we believe that OTT usage will contribute to the saturation of the markets in such a pronounced way that declining revenues are a distinct possibility.

To a greater or lesser extent in all the analyzed markets, the main positive driver for telecom operators will be the strong anticipated increase in data usage, which is, of course, very much related to the continuing proliferation of OTT services. In the most developed markets average data usage per capita might reach 10-12 GB/month. However, this increase in data volume will be largely offset by declining data prices, which, in combination with declining voice (in some markets) and messaging usage and prices, means that players' revenue will be at risk.

4. Ride, don't fight, the OTT wave

In this chapter we present possible strategies for addressing OTT players. We believe that it is imperative for operators to partner with OTT players while offering attractive bundles of voice, text and data. At the same time, we believe that there might be an opportunity for a local leader in OTTv, given pan-regional distribution, top content and swift execution.

The range of responses to the OTT threat is known, but which ones are viable?

The range of responses to OTT has been known since operators in markets that were disrupted started grappling with the issue more than five years ago. In general, operators are presented with a portfolio of tactical responses, as summarized in Figure 28.

Figure 28: Range of responses to OTT services

Response	Description
Offensive	<ul style="list-style-type: none"> ■ Matching service(s) of OTT player(s) ■ Constrain for OTT player(s) and service(s) as much as possible (by operators and regulators)
Defensive	<ul style="list-style-type: none"> ■ Neutralization of effects of OTT service, i.e. soft cap ■ Selling of bigger data packages instead of several small ones ■ Flat fee for voice and text messages (national)
Cooperative	<ul style="list-style-type: none"> ■ Sponsored data approach ■ Partnerships with OTT and benefit from their services ■ Investment in or acquisition of OTT players

Source: Arthur D. Little analysis

At the same time, the diversity of our survey responses has shown that a **regional consensus concerning how to react to the OTT threat is not yet established** – either across or within operators. In several cases, respondents from the same company had opposing and contrasting views of how to deal with and respond to OTTs. As a result, players feel that they do not have coherent strategies to address the OTT threat.

“It is noteworthy that the mindset to approach OTTs as customers/partners is largely lacking thus far.”

EGM of challenger

OTTs are eating messaging – partnership is left as the viable option

The impact on messaging has been the most severe. OTT services have largely substituted SMS messaging around the world. Users of WhatsApp alone send more messages worldwide (~30 bn daily) than the total number of SMS messages (~20 bn daily) worldwide. As a result, from the perspective of mobile operators, messaging can be regarded as being lost to OTT players. However, several of our survey respondents argue that SMS will not disappear and is here to stay for the future. In order to protect SMS revenues as much as possible, players introduce extensive SMS plans in the form of bundling of SMS within larger plans, which will help to minimize the OTT impact. Most regional operators are already applying this strategy. In addition, respondents felt the momentum of OTT messaging could be slowed due to regulatory interventions, e.g. on security concerns.

“GCC operators are seeking collaboration opportunities with OTTs in specific areas, while blocking them in areas where they are a clear threat.”

Group CTO of incumbent operator

Partnering with messaging OTTs has already been tested in the region. In at least one instance, one player in the region has partnered with WhatsApp by providing a specific WhatsApp tariff. This can serve to generate incremental revenues. Attempts by telecom operators to enter the OTT messaging space have typically failed but for a few venture-backed examples, which have succeeded in gaining traction in selected geographies. During our discussions, respondents within local telecom operators did not express an appetite to pursue own OTT messaging platforms.

Voice is not quite as dead as people think

OTT voice services seemed positioned to create the same disruption as in messaging, at the expense of telecom operators. The scale effect is more muted, though, due to the

synchronous nature of calling as opposed to messaging, in particular in the Middle East. This has further been supported by regulatory actions that have restricted the provision of telephony-like services by OTT providers. As a result, traditional voice still has a strong value proposition that operators have been able to monetize.

The key response strategy has been the introduction of smart plans. Similar to the above SMS bundling, these plans include an **attractive bundling of voice, data and SMS**. The objective is to bundle voice and SMS products with data while the customers still perceive their value and accept their price level. As a result, the end user is less incentivized to use OTT services. For instance, operators now offer flexible minutes regardless of destination (domestic or international) to almost every country in the world, thereby reducing the consumer’s need to turn to OTT solutions to save on calling costs.

“OTT voice is a clear threat for telcos, and we need to get our act together to counter that. The pace of innovation of such players is extremely swift (e.g. interface usability, feature set, etc. offered by WhatsApp), and we need to evolve ourselves to match that.”

Group CCO, Middle East incumbent

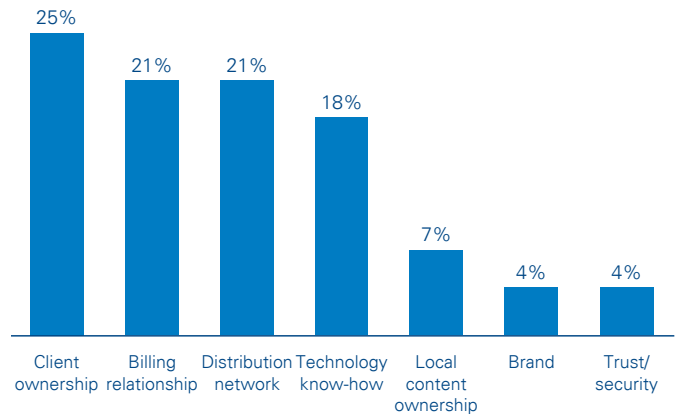
Video is still an opportunity

OTTv is an opportunity in the region. A player with premium content and swift execution that manages to gain subscribers to the tune of 1.8 million households can become the local leader. However, given that this represents 50% of the addressable market in the MENA region according to our estimates, there is likely room for one winner only. We analyze the topic in detail in the special focus section, “Opportunity for a local leader in the OTTv space.”

For telecoms that are not aiming to be the OTTv leader, there is a chance to position themselves in the playing field by utilizing their key assets, as shown in Figure 29 – including client ownership, billing relationships, distribution networks and technological know-how.

Figure 29: Most important telecom asset based on interview responses

Share of respondents mentioning telecom asset as being the most important one



Note: More than answer possible
Source: Arthur D. Little interviews

“OTTv is a key topic to us as we have launched a complementary product offering to provide a multi-screen experience. Thus far, we have been cooperating with other players. We want to have a stand-alone OTT video service as well.”

VP of incumbent operator

Response strategies to the rise of OTTv for such players should incorporate cooperation on several levels:

- For starters, a **strategic partnership may be formed**. The operator may be able to supplement its service portfolio or develop add-on packages to consume the OTT service. In addition, operators can leverage their key assets to provide benefits to the OTT player – for instance, in the form of operator billing or expanding the distribution reach of the OTT. This has already started to happen in the region, as observed in the partnerships with icflix and STARZ Play. Vodafone formed a partnership with “OSN Go” in Qatar to provide multiscreen services,¹¹ whereas other services such as Telly and Spuul are being offered by Ooredoo.

¹¹ Vodafone Qatar, 2015

- A bolder response is **investment in an OTT player**, either as a minority or majority stake, in order to increase market share, acquire capabilities or differentiate the service portfolio. The disadvantage of such a strategy is the strategic and financial commitment to undertaking M&A activities. In addition, the OTT landscape is still fragmented, and thus success of single acquisitions needs to be evaluated carefully.
- Cooperation may also take the form of an **open-platform approach by the player** in order to enable OTT video and other content players, such as gaming, music and advertising. As a result, the operator will become the center of a new ecosystem. Operators can utilize their key assets of billing, reach and market know-how to provide incentives for players to join their platforms.

In any case, consumer spend must be rebalanced

“Customers pay for better access to content (GB/speed).”

Group Director of Entertainment, incumbent operator

The decline in voice and messaging revenues as a result of OTT usage typically results in a decline in consumer spend and

ARPC. As we have demonstrated, this has already happened in some MENA markets, whereas in the rest, it is yet to happen. Telecom operators are thus faced with rebalancing the consumer spend from voice and messaging towards data, ideally while maintaining similar ARPC levels. As a start, the majority of operators have changed their price structures from unlimited packages to tiered pricing with definite data caps. This rebalancing is going to be a challenge in the short to medium term, when data offers can be seen as cannibalizing core revenues, but **we believe that telco operators should put themselves in a position to manage this shift and extract value out of the subsequent traffic growth**. We suggest the following actions:

- **Make sure that tiered pricing is in place** with appropriate thresholds, given typical usage and competition price plans in the market.
- **Provide users with opportunities to increase their data allowances**. These should be easy, instantaneous and reasonably priced in order to stimulate impulsive usage.
- **Any effort to rebalance must be accompanied by a matching customer experience**. The commercial officers we spoke to consistently highlighted this as a lever that had not been a focus for telecom operators in the region so far.



Opportunity for a local leader in the OTTv space



OTTv – still anyone’s game

OTT voice and messaging are relatively mature and the winners are clear. As a result, benefits will accrue for global players largely at the expense of local – in this case MENA – telco incumbents.

OTTv is in a more nascent state and consumer preferences – which vary in terms of content type and language – matter to a large extent. As a result, we believe **local players may have a chance under certain conditions to establish sustainable scale before global players enter the market on their own.**

Favorable conditions are emerging...

Among the MENA markets there is a common language across all countries (excluding Iran), as well as broadly similar preferences that help to redistribute local-language content across markets. This makes it relatively easy to provide localized content to all markets – a key differentiator in video. Furthermore, there are markets with very high smartphone penetration, in particular the GCC states, whereas adoption is increasing rapidly in the less affluent states with the help of

constantly decreasing smartphone prices. In many markets the telecom infrastructure for both fixed and mobile access is relatively advanced, and fiber is being rolled out aggressively.

“The MENA region looks attractive for OTT on paper, but in reality media monetization is hard because of lack of ability (purchasing power, low credit card penetration) and willingness to pay (piracy, VPN).”

Media Executive

...but multiple challenges remain

However, local players – established Pay-TV providers/content aggregators and newer ventures alike – face several critical obstacles:

1. Firstly, in order to compile an attractive value proposition, top-notch content (e.g. series, movies and potentially even sports) must be available, which comes at a hefty licensing price tag – exacerbated by a series of new players that used content exclusivity as an entry strategy.

In the case of sports in particular, cost is rising – the latest broadcast rights for the Saudi Professional League (SPL) and King’s Cup matches¹² is a case in point. This saw the SPLs value increase from USD 40 mn to over USD 109 mn per season compared to the previous period. BeIN Sports has paid more than USD 300 mn for a three-year period of television rights for the English Premier League for 23 countries in the Middle East and North Africa region.

A point of differentiation for a MENA player could be local content, i.e. language-specific content in Arabic, French, Hindi/Urdu or Tagalog and other niches. This may be a key to success if sourced at a competitive price and distributed on a MENA scale from the GCC over to the Levant and North Africa.

2. Secondly, in order to achieve pan-Arab scale, the fragmented market and regulatory environment (in terms of content licensing and approvals) must be overcome. We do not expect this environment to be harmonized in the

¹² Sold to MBC in a 10-year deal worth USD 1.093 bn (Al Arabiya News, 2014).

Special focus

foreseeable future, and it requires work for any new player looking to scale.

3. Thirdly, a large global player – Netflix – has already entered the MENA market, and is available in all countries except for Syria. Luckily for players in the region, only a limited catalogue is available for the moment, including none of Netflix’s top shows and no local content. Nevertheless, Netflix’s presence could be detrimental to the success of local OTTv players unless they can offer the same or better content at comparable prices.
4. Finally, piracy remains a serious issue too, which means a winning provider must exert targeted efforts to:
 - Provide a more convenient, seamless experience in order to lure consumers away from pirated content
 - Find the right price point at which consumers will be willing to pay
 - Partner with authorities and legislators on piracy crackdown.

“We have learned a lot from what has happened in Europe, e.g. acquisitions of OTT/online platforms, and our focus is on partnerships as a key strategic driver.”

Group CCO of incumbent operator

“Local OTT start-ups will face a big challenge, as a purely local content-based business model will not reach the scale, as although the greater MENA landscape is unified by a common language, there are specificities of political and regulatory nature in each market.”

Group CTO of incumbent operator

icflix reported a subscriber base of 35,000 in October 2014, charged USD 8–10/month. It also had a library of 7,500 hours of international content and 35,000 hours of Arabic content, equivalent to 28,000–28,500 movies. We estimate local/Arabic content to cost half as much as the licensed international content.

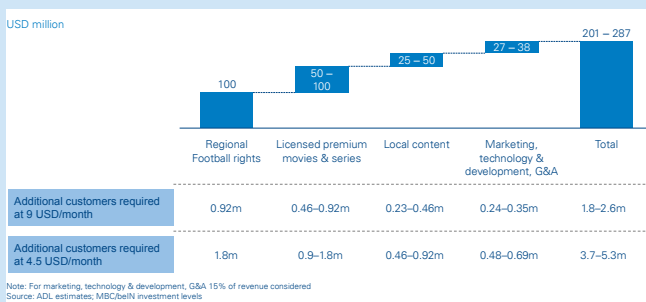
This illustration shows that any local OTTv player would need to increase its subscriber base to 1.8–2.6m paying customers, assuming a price level of USD 9/month. Even if sports rights are excluded, a minimum of 1m paying customers must be attracted to amortize the costs.

Due to the high income differential between the GCC states and other MENA countries, a lower price needs to be offered for a winning proposition in the non-GCC markets. A price of USD 4.5/month would translate into 3.7–5.6m subscribers needed in order to amortize costs, which would fall to 1.9–3.5m subscribers without sports rights acquisition.

With 82m MENA households, out of which 5–8% have a broadband connection, **even in the best-case scenario of an OTT player requiring 1.8m subscribers to amortize costs, 50% of the current addressable market must be obtained.** To put this in perspective, the leading regional player, OSN, reports closer to ~1m subscriptions, whereas all leading operators in the region combined have less than ~1m IPTV subscribers, with overlaps between the reported subscriber bases.

For both regional aspirants and international entrants, **mastering the fragmented market space requires the ability to quickly gain significant scale and maintain an attractive and competitive value proposition.** We believe in the likelihood that **there will be one or two winners with a relevant/dominant market share.**

Figure 30: Assessment of a MENA OTTv player’s ability to purchase premium content rights



All said and done, it’s a numbers game still

We performed an analysis of the Middle East TV market to identify the scale needed for a pure OTT player to propose a content catalogue that could successfully compete with the TV incumbents or a global OTT entrant. For this, we used a previous Arthur D. Little analysis of the UK market¹³, as well as available subscriber and pricing data for the local market and our own assumptions.

13 In a previous analysis of the UK market, Arthur D. Little showed that in order for a pure OTT player such as Netflix to propose a content catalogue to successfully compete with BSkyB, it would require an additional 9.4m subscribers, i.e. a total subscriber base of ~13m and 50% household penetration; for this we assumed a ratio of 60% between premium movie rights costs and premium sports rights costs. Here we are using the same ratio for cost estimate and adjusting for purchasing power relative to the UK and for MENA population size.

5. Explore adjacent revenue streams

In this chapter we explore opportunities for MENA operators to tap adjacent revenue streams. One of the promising areas that we identify includes managed and cloud services on the back of the high forecasted growth of the IT markets as well as the relative lack of competition in certain segments. Another opportunity that we see is smartization, which is a strong trend in particular in the GCC markets.

The statistics and market forecasts analyzed so far do not tell the whole story. There will be increasingly more mobile devices, which will generate and consume larger volumes of data. This, along with innovative applications of mobile technology – are driving new revenue opportunities for the telecommunications companies that are ready to embrace change. Our interview respondents point at smartization, M2M, ICT and B2B – in particular managed services, including cloud and data center services – as the revenue streams telecom operators should develop further.

These revenue streams are of particular relevance to the markets that we identified as “digital leaders”, where both mobile and fixed internet usage is high. In these markets individual and business users are ready to consume – and even demand – digital services, whereas traditional telco voice and messaging revenues are at risk and, in some cases, already eroding. As a result, there is both the market acceptance and the provider need for new revenue streams.

In this first edition of the report, we explore ICT and smartization in more detail.

ICT – Managed services and cloud are very promising for operators in the region

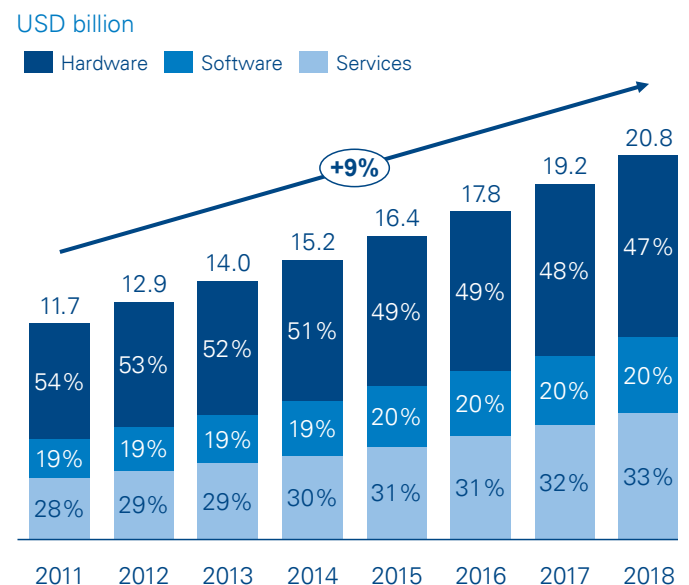
Currently, IT is underdeveloped across the region, representing a small fraction of GDP compared to the developed markets. Even in the most advanced MENA countries such as the UAE and Bahrain, IT spending does not exceed 1–1.2% of GDP, whereas in developed markets the respective figure is usually 2–3%. Therefore, there is huge room for growth in all markets, and telcos are naturally positioned to capture this growth. The UAE and KSA are the largest IT markets in the MENA region, and we expect them to remain in the top-two positions, followed by Egypt and Qatar.

“Growth can be reached through digitalization and diversification of activities.”

Chief Strategy Officer of challenger operator

The strongest driver of this market growth comes from the services space, which is forecasted to increase its share to 33% in the eight analyzed markets. Regional operators are in a position to offer managed services, cloud services, data center services and, through partnerships, software to their business clients. We believe that the managed services market addressable for telcos is ~15% of the total IT market size.

Figure 31: Composition of IT market value – 8 MENA markets



Note: Markets analyzed include UAE, Saudi Arabia, Egypt, Lebanon, Kuwait, Oman, Bahrain and Qatar
Source: BMI, Gartner, Pyramid, Arthur D. Little Analysis,

Many of these services can be offered by telcos, namely managed voice and data, managed voice systems and call center, managed LAN/WAN, managed security, managed disaster recovery, managed mobility, managed housing/ colocation, managed hosting, infrastructure as a service (IaaS), platform as a service (PaaS), software as a Service (SaaS) and M2M services.

Telecom operators are in a good position to capture market share in the ICT market. To begin with, leading global players

for data centers (e.g. Rackspace, Amazon Web Services), connectivity (e.g. Interoute, Telecity) and managed services have not yet developed strong, dominant presence in the region. Neither is there a clear regional IT champion in the fragmented MENA landscape. As a result, telecoms are in a position to address this white spot to their advantage by extending their B2B/managed services portfolios and potentially combining them with connectivity. Many leading operators already have many of these services in their business/enterprise portfolios and are considering looking at acquisitions and partnerships to further strengthen their position.

Additional incentive for telecoms is provided by the relative immaturity of the managed services market in the region, which translates into strong growth. In particular, in markets of the GCC, managed services are growing at 15–20% p.a., far exceeding the growth of operators’ traditional business.

In order to enter the ICT market successfully, **telecom players need to ensure three key pillars** are in place:

1. End-to-end process **capable of addressing the whole process** from market demand to customer fulfillment; key functions such as marketing, sales, product development and operations need to be put in place to that end.
2. Specific **vertical solutions need to be developed**; operators can acquire the needed capabilities to put these in place with a **combination of partnership and targeted M&A activity**.
3. Finally, in many countries of the region the government and government-related entities are among the heaviest spenders on ICT, **strong relationships with the governments** need to be forged in order for players to position themselves as strategic partners in the implementation of e-projects and digitalization.

Figure 32: Window of opportunity in B2B/managed services in the GCC



Source: Arthur D. Little analysis

Special focus

Smartization – nascent but regional opportunities abound

The digitalization of things, or “smartization”, leads to a plethora of opportunities addressing adjacent markets; yet operators are still in early testing stages as they seek to expand beyond connectivity in energy, health, retail or cars. Given the breadth of the space, we have selected smart city for further analysis.

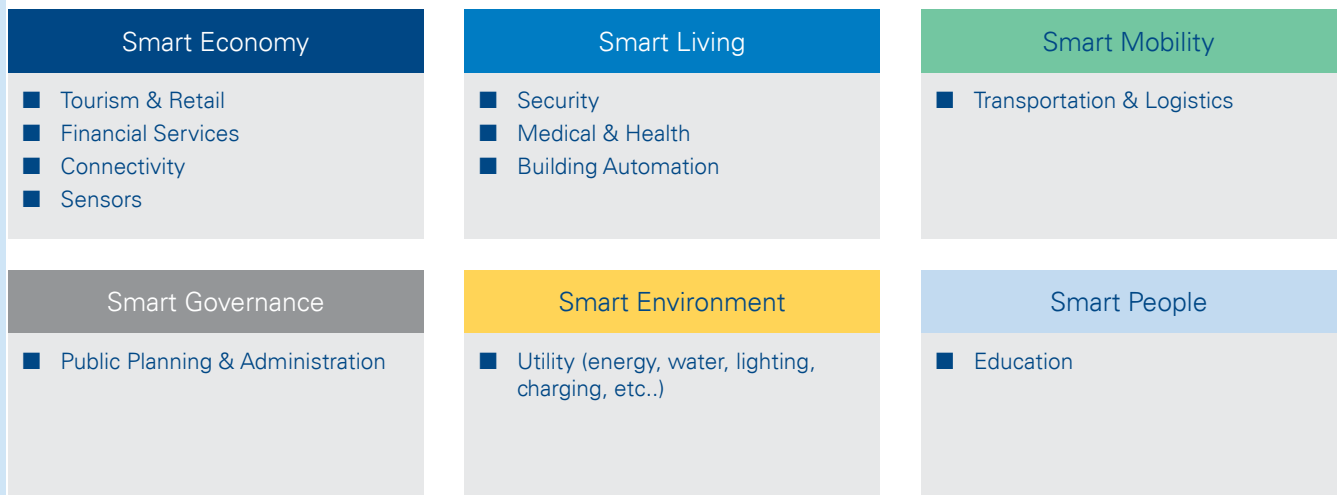
Smart City

The trend of connecting smart cities to the plan of economic diversification is gaining ground fast in the GCC markets. Three countries have already announced projects for future smart cities:

- **Saudi Arabia:** six greenfield economic cities, complemented by efforts to uplift cities such as Mecca toward smart-city status
- **Qatar:** three projects – Lusail’s Smart and Sustainable City, the Pearl-Qatar Island, and Energy City Qatar
- **UAE:** two projects – Masdar City in Abu Dhabi and Smart City Dubai

Dubai in particular is providing local firms, including telecom operators, with the opportunity to participate in the smart-city initiative within its smart-city framework, in light of hosting the Expo 2020 exhibition:

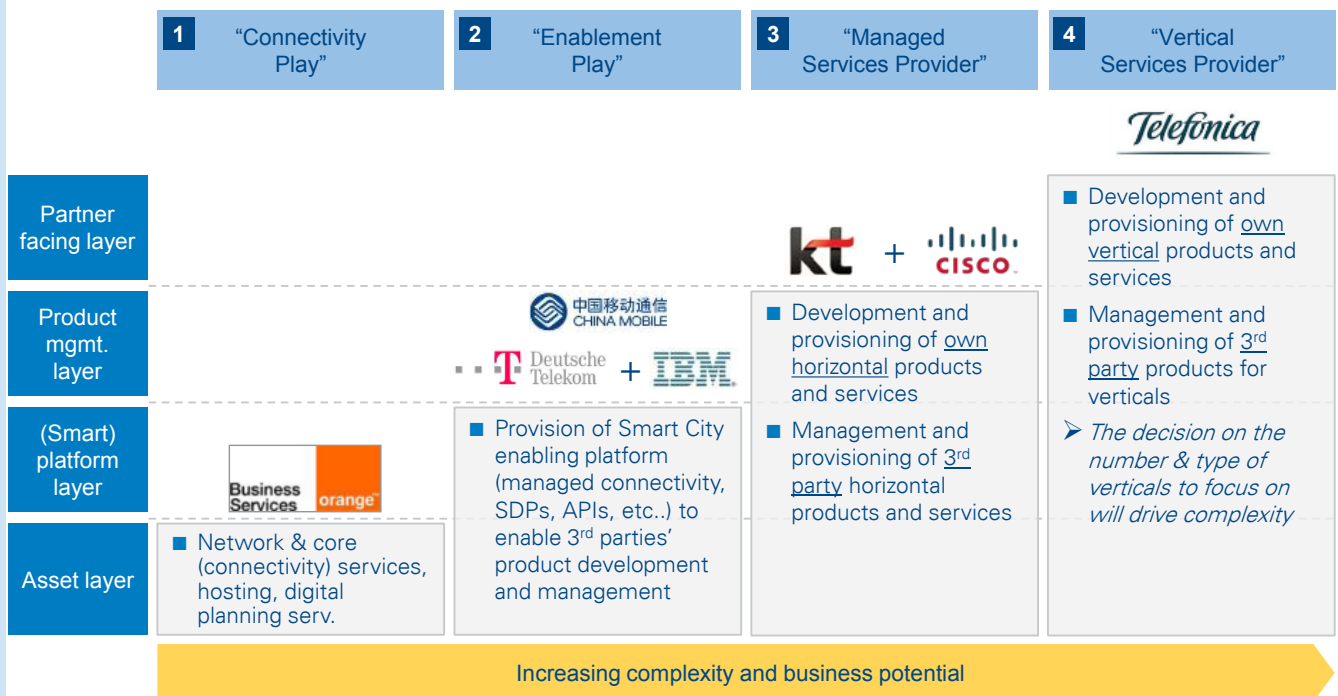
Figure 33: Dubai Smart City framework



Source: Government of Dubai, Arthur D. Little

Generally speaking, telecom operators position themselves across the value chain either independently or through strategic partnerships to complement their connectivity capabilities, as depicted in Figure 34 below.

Figure 34: Telecom operators' smart city strategies and activities



Source: Arthur D. Little

A key success factor is becoming an enabling platform, as many other services must be connected with each other and compatible. In order to venture into this brave new world, the ability to enter into, manage and maintain partnerships is essential. Further details on the topic can be found in Arthur D. Little's report, "*Connecting the dots: Telecommunication providers as enablers for Smart Cities*".

6. Beyond growth, operators must improve their efficiency

In this chapter we look at measures telecom operators can take to increase their efficiency. We believe there are significant opportunities for performance improvement. Digital transformation could bring about up to 30% efficiency gain, bad debt improvement could increase EBITDA by 1-2%, whereas infrastructure sharing is in its infancy and should be exploited.

Beyond driving growth in data monetization or tapping adjacent revenue streams, operators in the MENA region have a significant need and opportunity to look further down the income statement. “Digital leaders” and “attackers in fixed” have not made particular efforts to be efficient so far, but they have to recognize that their margins are at risk due to OTT revenue erosion and increased competition. “Mobile-first” and “catching-up” markets, on the other hand, are working in more difficult conditions by definition, with higher levels of competition, lower purchasing power of the populations and, in some markets, political unrest. There are **multiple untapped opportunities to improve efficiency that are relevant across markets**.

Performance improvement is untapped in the region

Our scan reveals that many operators in the region still enjoy higher margins than those prevalent in the developed European markets. In spite of this, operators should adopt more widely leaner approaches that set them on course for digital business models¹⁴.

Bad debt improvement might drive 1–2% EBITDA increase

Despite its high number of prepaid customers, the MENA region has a large amount of outstanding debt. Several policy- and practice-related issues and challenges have resulted in a significant proportion of late payments, which, combined with poor late payments collection, lead to bad debt accumulation. Operators in the region have high days of sales outstanding (70–100 days of sales) and bad debt expenses at up to 2.5–3% of annual revenue.

Arthur D. Little recently completed a “bad debt collection” project for a regional incumbent in order to help them understand the sources of and mitigation opportunities for

Digital transformation is becoming an imperative in multiple industries, and is especially prominent in telecommunications. Due to the fast pace of change in the industry players have generated significant complexity over time, in particular in their processes and product portfolios. A telecom operator today employs significantly more service platforms, launches more products more frequently and sells more devices. As a result, change is required in multiple dimensions of the operating model, including sales and care channels and processes, product and service portfolio and IT and network technology and infrastructure. Our experience from working with telecom operators on their radical transformation journeys shows that **efficiency improvement of 30% or more is possible**.

In addition, players should employ a combination of performance improvement measures spanning revenue assurance measures, capex/opex optimization, and support of organizational transformation across all functions in order to become fit for the future. Here, we focus on bad debt improvement to demonstrate a tangible improvement opportunity.

Special focus

bad debt. We identified key issues and challenges faced by the client that have led to high bad debt – this was based on extensive analysis (over 100 mn records) of billing and payment history of post-paid customers and insight into the order-to-cash process from five operators as benchmarks.

Insight from the case clearly highlights that an organization's performance on receivables management is a result of the adopted policies, processes and existing IT infrastructure. While organizations typically blame customer behavior, regional culture, etc. for poor performance on receivables management, the root cause is mostly gaps in policies, processes and/or IT infrastructure.

¹⁴ For more details on digital business models please see the Arthur D. Little study, “Digital Transformation – How to Become Digital Leader,” 2015

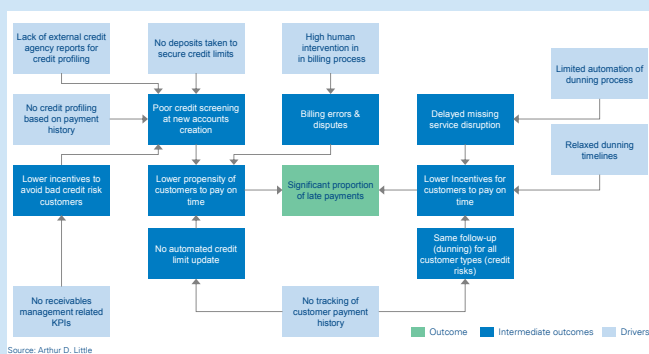
There are several process gaps which lead to a higher number of late payments:

- Poor account screening driven by **lack of external credit agencies, no deposits to secure credit limits, lack of credit profiling due to the sales cycle, and no receivables management-related KPIs**;
- **Billing errors** due to high human intervention in the billing process
- **Limited automation of dunning processes and relaxed dunning timelines**
- **No tracking of customer payment history**, which leads to lack of differentiation in the follow-up process for different customer types and no automated credit limit update

Once late payments have been accumulated, the problem is exacerbated by poor collection. Typically the reasons for this include:

- **No pressure on customers to settle payments**, including no missed payment follow-up, no legal action against late payers, no blacklists of late payers to be shared among operators and unclear processes for enterprise customers' late payment follow-up
- **Low management attention to collecting late payments**
- **No easy way for customers to settle late payments**
- **Delayed dunning** due to high human intervention in dunning processes

Figure 35: Drivers of late payment accumulation

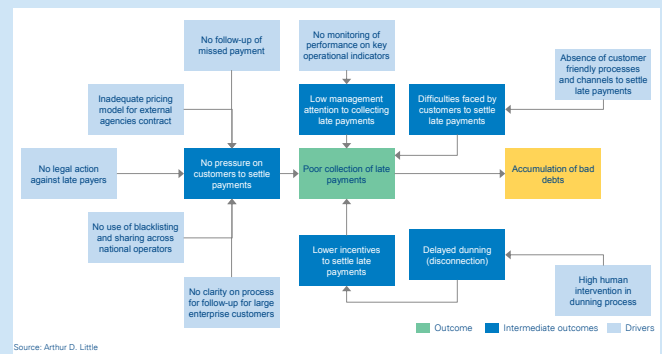


Ensuring better performance on receivables management requires a focused cross-functional (sales function, finance function, receivables management function, IT function, etc.) effort to instill better processes and enforce discipline. Often the issues are not in policy/process definition, but in implementation of these policies and processes. Reducing bad debt is possible with adequate collaboration across these functions, and starting with getting the basics right and moving to higher levels of sophistication across key processes:

1. Enhanced customer screening and credit limit setting
2. Improvement of billing and bill dispute management
3. Timely follow-up on late payments
4. Enabling and incentivizing payment after service discontinuation
5. Recovery through outsourcing of collection or legal action

The change requires support from the top management. Top management focus is justified given the **potential impact of 1–2% improvement in an operator’s EBITDA**. A cross-functional team, reporting to senior management, to drive this process change in the organization is an effective way to achieve the results.

Figure 36: Relationship of late payment collection and bad debt accumulation



Infrastructure sharing could unlock potential savings

So far, deals in the MENA region at operator level have focused more on reshuffling of ownership stakes or entry of new players rather than consolidation attempts. We do not anticipate in-country consolidation at the operator level in the foreseeable future – if anything, we expect the number of players to increase. The consolidation that we expect to see is driven by technology and/or regulation in terms of infrastructure sharing.

“The telecom industry is facing a general trend of consolidation after a sustained period of growth. This consolidation trend is clearly visible in Europe, where operators are increasingly focusing on optimization.”

Group CCO of incumbent operator

For example, in Western, Asian and African markets, some form of infrastructure sharing has been adopted in order to optimize the capex and opex of operators. However, for both the GCC and North African countries, this practice is still in its infancy despite the **potential for 25–35% capex and 10–20% opex reduction over five years in European markets**, as highlighted in Arthur D. Little’s 2014 report, “*Capex: the long march!*”. We have seen secondary research numbers estimating that the savings potential from infrastructure sharing for MENA operators could be as high as USD 8 bn.

“Consolidation will be a major trend going forward in all forms – tower sharing, network sharing and even M&A.”

Group CCO of incumbent operator

In North Africa, we are only aware of four such agreements:

- In 2008 Meditel and Wana signed an agreement to share passive network infrastructure in Morocco;
- In 2014 Mobilis and Djezzy signed an agreement to share towers in Algeria;
- In May 2015 Eaton Towers and Mobinil signed an agreement for purchase, leaseback and management of over 2,000 Mobinil towers in Egypt;

- In October 2015 Tunisie Telecom and Ooredoo Tunisia signed a radio access network (RAN) sharing agreement.

In the GCC efforts are at an even more nascent stage:

- In Qatar in 2009 Ooredoo (then called Qtel) and Vodafone Qatar signed a deal for outdoor site sharing, which allowed Vodafone Qatar to share Qtel mobile towers and Qtel to share Vodafone Qatar mobile towers.
- In the UAE, du and Etisalat have spent several years trying to negotiate terms for a sharing agreement, but to date no such agreement exists.
- In Saudi Arabia, sale of towers or a creation of a tower company was considered by the two largest mobile players, but the deal did not materialize.
- In January 2015, Kuwaiti telecom operator Zain appointed advisors to study the potential sale of its transmitter towers in some of the eight markets in which it operates. With no significant tower company activity in the Middle East, the acquisition of the Zain portfolio could offer a player the first foothold in a potentially very profitable market.

In addition, eight major mobile operators (Bharti Airtel, Etisalat, MTN, Ooredoo, Orange, STC, Vodafone, and Zain) in the Middle East and Africa (MEA) announced plans to work together on a new network infrastructure-sharing initiative in March 2014. Collectively, the eight operators manage 551 mn mobile connections via 79 mobile networks in 47 countries across the MEA region.

Nevertheless, in many countries under this memorandum, a lot more work still needs to be done on developing suitable regulatory frameworks that allow for flexible commercial sharing arrangements. Even where the local policy environment is supportive, and regulatory conditions offer practical flexibility, challenges remain from:

- Difference in long-term objectives;
- Imbalance across operators to the extent of infrastructure owned by incumbents;
- Preference to compete on the basis of infrastructure rather than on a service-based advantage.

Conclusion

The dynamics of the region, largely, reveal that OTT services are bringing about a momentous change in the telecommunications industry of the SA-ME-NA region, after having made observable changes in other regions all around the world. Many telecom operators in the MENA region, some of which having operations in South Asia and in other Asian and African markets, have so far been in a privileged position compared to developed markets. This has been due to the region's high population growth, somewhat limited telecom competition and associated high prices, in particular in the GCC and Levant sub-regions, as well as pro-incumbent regulation. This is about to change:

- **The regional situation is not sustainable** – declining messaging and voice revenues are already being observed; in combination with population growth slowdown and likely regulatory easing, this will make the telecom environment a lot more hostile.
- As a result, **regional telecoms should ride the OTT wave** – the players' best reaction is to cooperate with OTT providers in the areas of messaging and voice, as developed markets' experience has shown that other tactics are largely unsuccessful.
- The **OTT video playground in the region is still wide open** and a window of opportunity may well exist for the creation of a strong local player on the back of common language, local content and knowledge of the region.
- However, **operators in the MENA region have to go the extra mile** – this includes tapping into adjacent revenue streams, in particular high-growth categories such as ICT and smart city.
- Furthermore, **sustained focus on efficiency must be implemented**, including possibly by means of radical transformation. Efficiency measures will boost operators' top and bottom lines and position them as centers of the nascent digital ecosystem in the region.

Acknowledgments

This report would not have been possible without the insightful and in-depth interviews conducted with our clients and industry experts in the Middle East and North Africa region in 2015. These were drawn from local as well as pan-regional telecom, media and internet players based in the UAE, Saudi Arabia, Qatar, Bahrain, Morocco, Tunisia and Iran, in addition to policymakers. Over 50 interviews were conducted overall, and our thanks and acknowledgments go to each and every interviewee.

Most respondents preferred that their input remained anonymous, and hence, no interviewee names or references to interviewee organizations have been provided.

SAMENA Telecommunications Council, the South Asia - Middle East - North Africa telecom industry association of telecom operators, feels that highlighting the market and growth dynamics of the MENA region, and openly discussing what changes are needed in the region, will prove to be insightful for the industry, especially for many telecom operators that are its members.

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