



The 5G era ahead

Jawad J. Abbassi

Head of MENA – GSMA

GCF 5G MENA workshop – 28 Nov 2018





Key views: MENA region

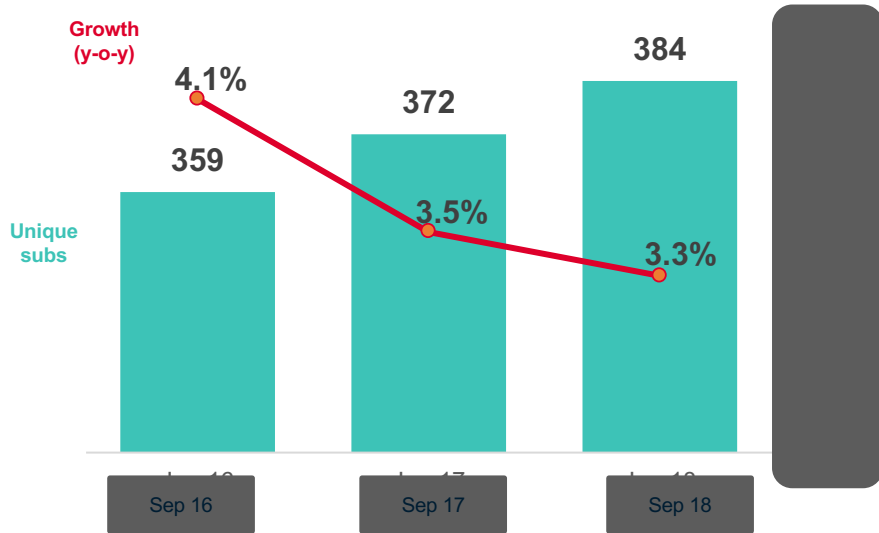
- 4G adoption is rising but not fast enough; only a third of smartphones in the region are connected to a 4G network. The main supply side issue continues to be adequate spectrum. The demand side challenge is in hitting price points that drive an ARPU premium on 3G but do not deter the bulk of the addressable audience.
- Ongoing investments in fibre infrastructure underpins the broader fixed-mobile convergence story. This offers growth and diversification opportunities for operators in highly mature markets where subscriber growth is in structural decline. Turkey has shown the strength of local content offerings as opposed to merely importing Western titles.
- IoT connections are growing rapidly; MENA now accounts for 4% of the total global IoT connections. With smart city projects gaining momentum in the region, IoT connectivity and applications will play a crucial role in enabling solutions that can drive efficiency, productivity and safety across different sectors, such as utilities, healthcare and transport.
- Economic growth in the MENA region is expected to rebound over the next two years, following a slowdown in 2017 on oil price volatility. The telecoms sector will, however, remain susceptible to macro risks, with currency fluctuations and inflationary pressure likely to weigh on business and consumer confidence.





Regional market trends: subscribers and revenue

Unique mobile subscribers (m)

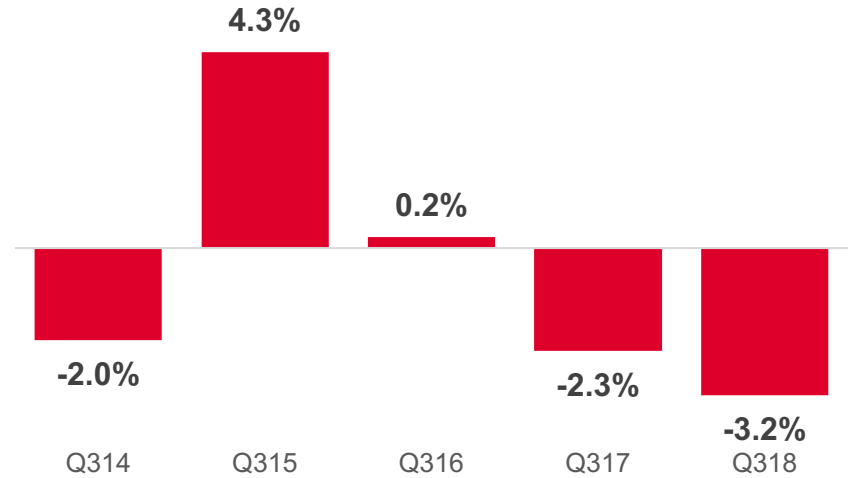


Subscriber penetration rate of 64% vs 66% global average.

MENA accounts for 7.5% of the global subscriber base.

Subscriber growth exceeded 5% in Bahrain and Somalia during Q318, the highest in the region.

Quarterly service revenue growth (\$, y-o-y)



Total service revenues of \$13.8b in Q3 2018, equivalent to 6.6% of global service revenues for the same period.

Positive revenue growth in local currency in most markets, but currency depreciation weighs on overall performance in US dollar terms.



Regional market trends: connections

Total connections

657m

Including

19.7m

 Cellular IoT connections

Smartphone connections

344m

51.3% adoption rate

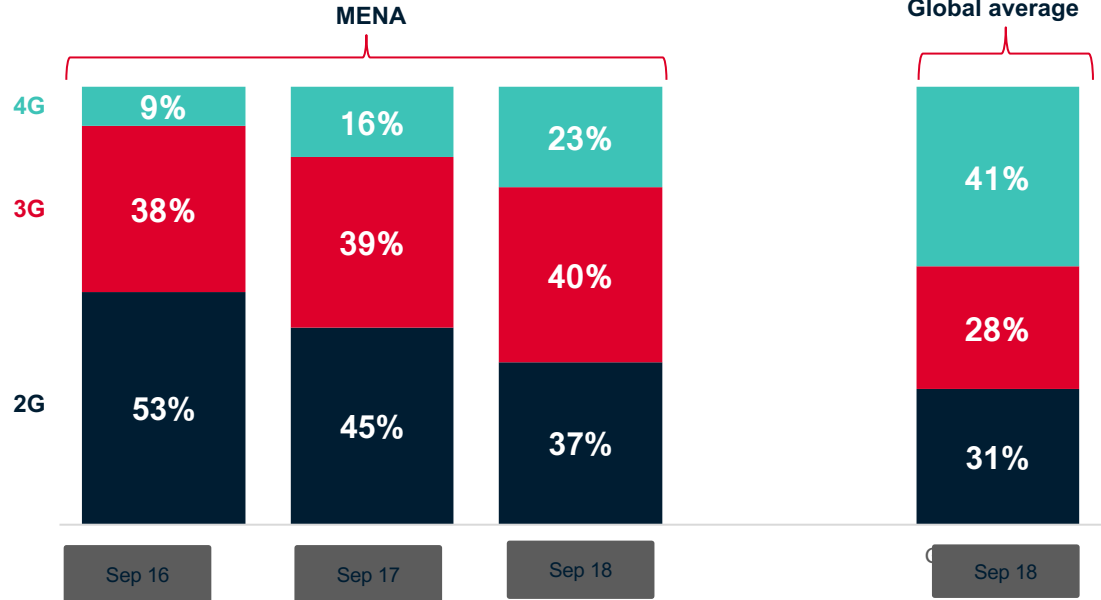
ARPU per connection

\$7.1

Global average

\$8.6

% of total connections*



*excluding cellular IoT



Regional market developments

Technology

eSIM: Etisalat first introduced the eSIM technology in May 2018 for the Apple Watch and, in October, launched eSIM services for iPhone devices. Du and Ooredoo have also disclosed plans to launch the service for various smart devices. The MENA region is set to lead the emerging eSIM market and the broader application of the technology across the consumer IoT market.

5G in MENA: 2018 has seen a raft of 5G trials across the region, including in Saudi Arabia, UAE, Qatar and Turkey. While fixed wireless is an initial use case for some of these operators in 2018, the first 5G mobile services will be commercialised in 2019. Beyond trials and commercial launches, mass deployment and service uptake will rely on spectrum availability and maturity of consumer and enterprise use cases in the region.

Regulatory

Jordan: A new income tax draft bill, announced in September 2018, will see a 2ppt increase in income tax increased on the telecom sector to 26%, in addition to several other general and sector-specific taxes.

Higher taxes and rising operating costs adversely affects profitability and operator's ability to invest in network development.

Mauritania: In October 2018, the government opened an auction for three 4G licences, with a fourth concession being made available to a new entrant. Mauritania is one four countries in the region (the other three are Iraq, Palestine, and Yemen) yet to launch 4G services. 3G services, first launched in July 2007, now accounts for more than half of total connections.

Competition

Mobile money (MM) developments

Tunisia: In April 2018, mobile operators - Ooredoo Tunisia, Tunisia Telecom and Orange Tunisia - launched interoperability for MM services. Interoperability can boost MM adoption and increase financial inclusion through network effects and by easing transaction processes.

Somalia: Despite its underdeveloped financial institutions, Somalia has one of the most active MM markets in the world. In April 2018, the World Bank disclosed that around 155m transactions, worth \$2.7b, are recorded per month in the country. MM has superseded the use of cash in Somalia, with over 70% of adults using the service regularly.

Morocco: In November 2018, the central bank and the telecoms regulator issued 11 licences for a new interoperable 'm-wallet' service, including to mobile operators Maroc Telecom, Orange and Wana..



Topic deep dive: operators scaling up IoT capabilities beyond connectivity

Connections

- 400m total IoT connections across the MENA region, split equally between consumer and industrial use cases.
- Industrial is growing faster, propelled by developments across different sectors such as **utilities**, **smart cities** and **healthcare**.

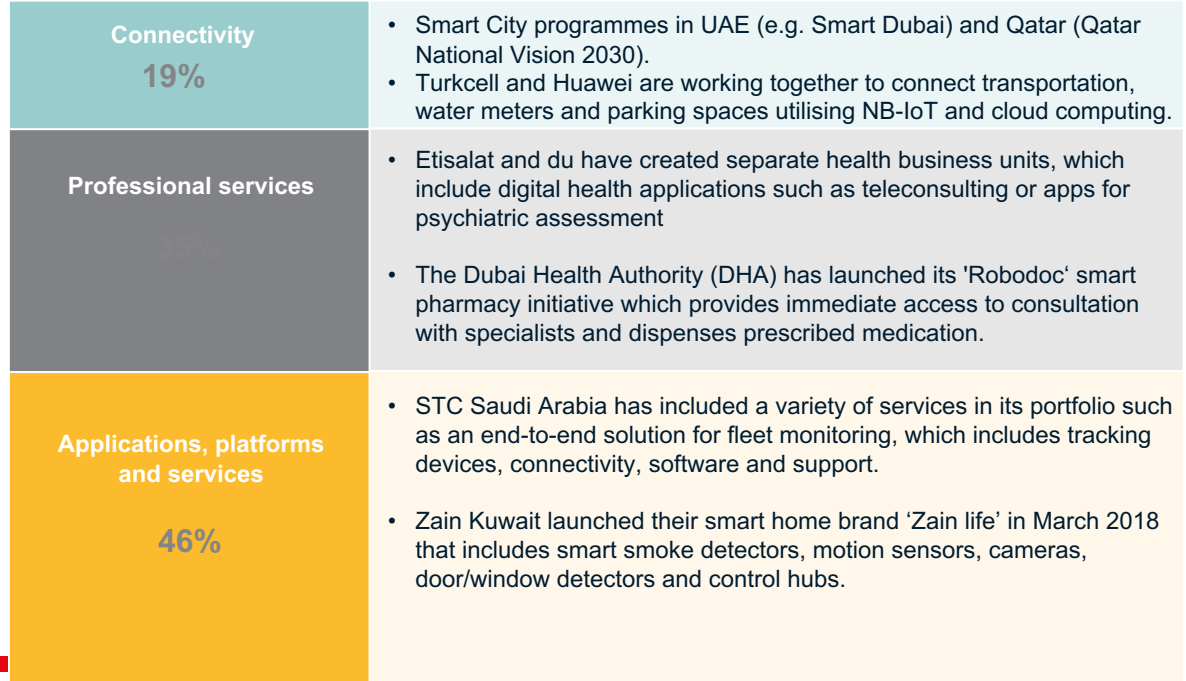
Revenue

- MENA total IoT market currently valued at \$16b.
- Given the opportunities higher up the value chain (see right), operators are recognising the need to expand their services beyond connectivity only.

Outlook

- By 2025, total IoT connections in MENA will reach 1.1b, with a market value of \$55b.

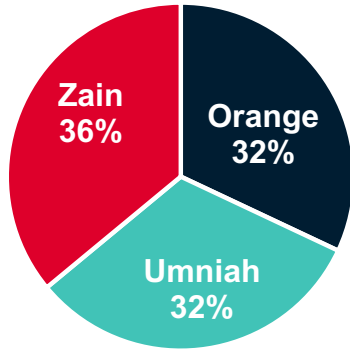
Total IoT revenue share (2018)



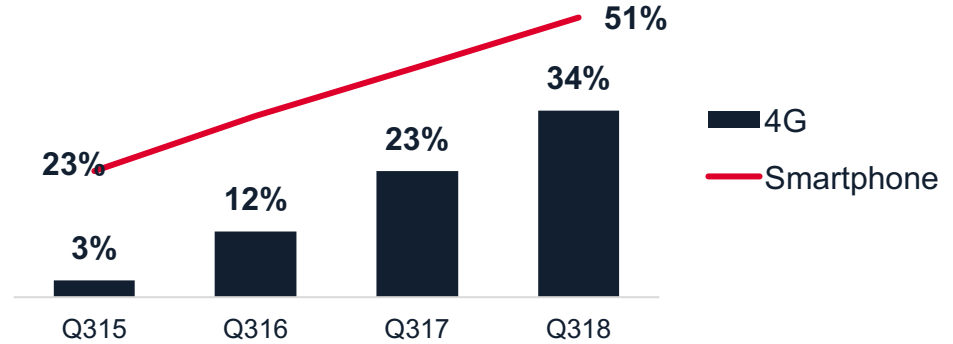


Jordan: 4G adoption rising but price competition erodes revenue uplift

Mobile operators market shares



Jordan 4G adoption is fourth highest across MENA



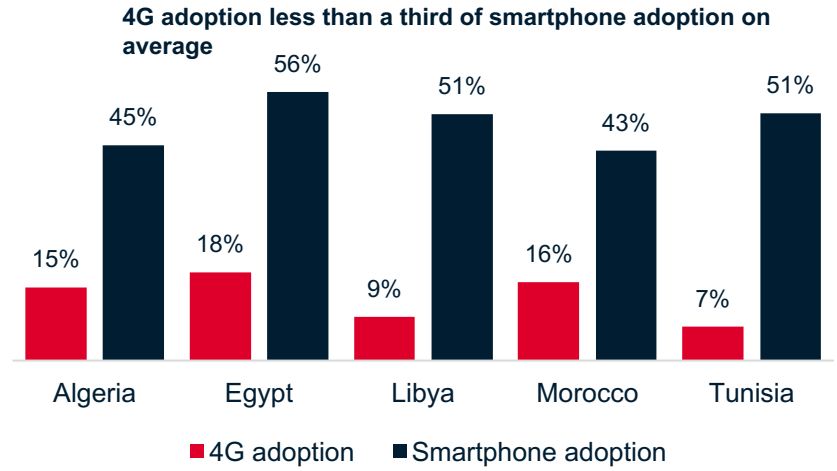
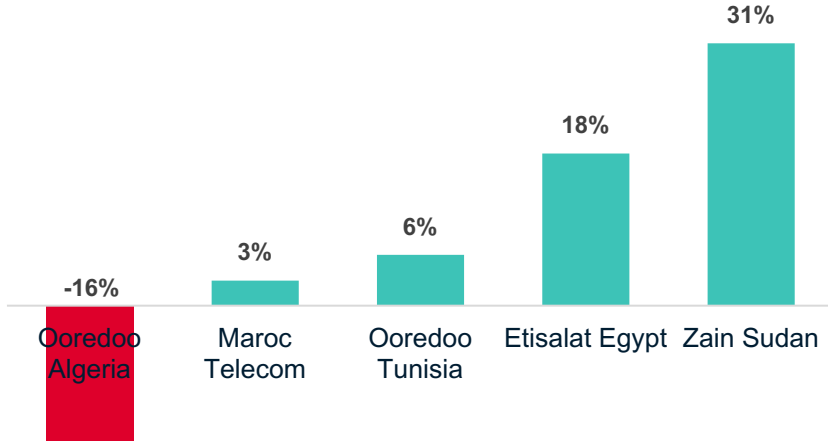
- All three mobile operators in Jordan – Zain, Umniah and Orange - have market shares of more than 30%, making the telecoms market one of the most competitive in the region.
- 4G adoption is rising steadily but intense price competition in the mobile market is eroding revenue growth. Operator will need to diversify service offerings in order to sustain growth and maximise returns on investment.
- Jordan is considered to have one of the most highly taxed telecoms sectors in the region which, along with declining revenue growth, dims the outlook for operator profitability and network investments.





North Africa: Boosting 4G adoption is priority

Q3 2018 revenue growth (y-o-Y) in



- Positive revenue growth for most operators in Q3 2018, but the economic slowdown in Algerian and weak household demand impacted revenues. This was exacerbated by intense price competition in the mobile market.
- Revenue growth outlook remains positive on strong uptake of mobile data services and continued subscriber acquisition, albeit in less lucrative segments of the market.

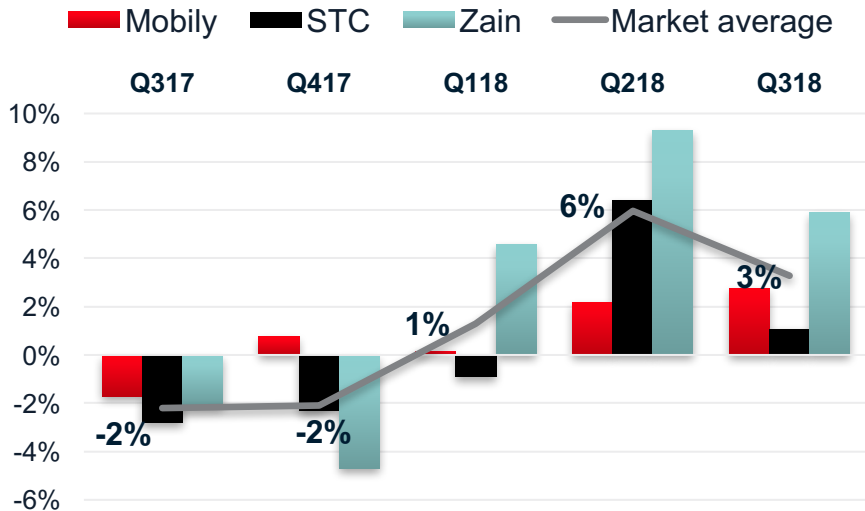
- 4G adoption is accelerating following new network launches; since the start of 2017, 10 4G networks have been launched in the region, including for the first time in Egypt.
- While rising 4G adoption will have a positive impact on ARPU, this may be offset by intense price competition. All but two of the countries in the region – Libya and Morocco – now record sub-\$5 ARPUs.



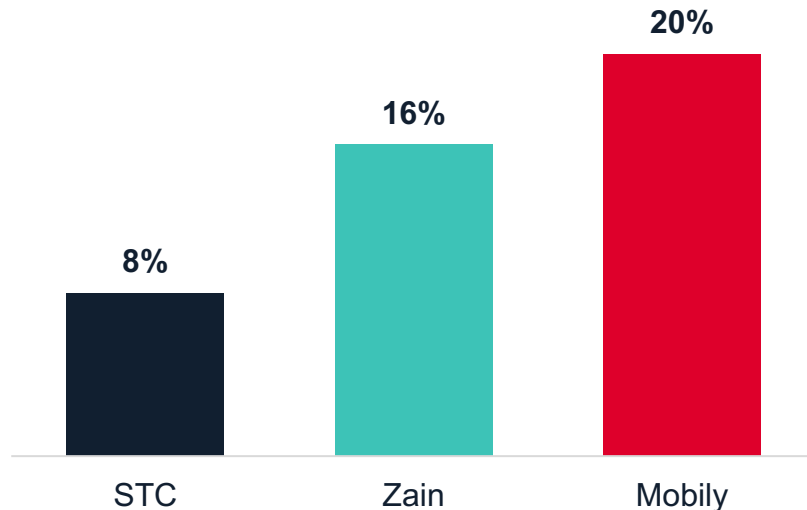


Saudi Arabia: Macro factors weigh on telecoms market

Quarterly revenue growth (y-o-y)



Q3 2018 EBITDA growth (y-o-y)



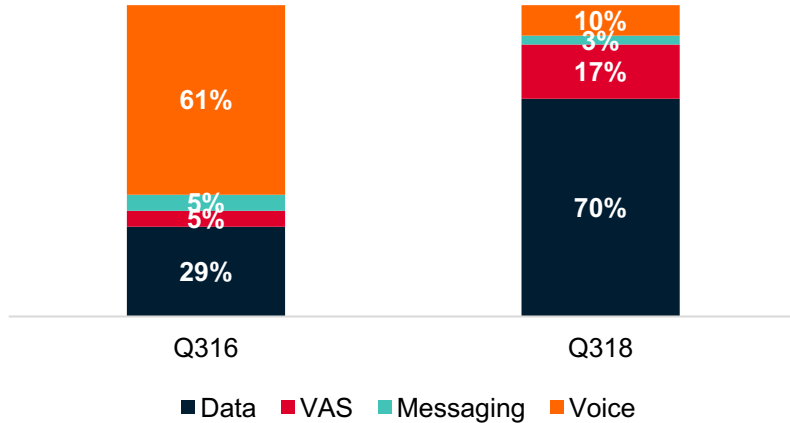
- Improving economy, after 2017 downturn, bodes well for growth, particularly in the fixed-line segment where operators are seeing strong demand for FTTH services.
- Mobile revenue growth will be constrained by the exodus of foreign workers (nearly 1m departures since 2016) and customer migration to recently unbanned VoIP calls.
- Operators saw strong EBITDA growth in Q3 2018 on operational and administrative cost rationalisation, but this is not sustainable if revenue weakness persists.





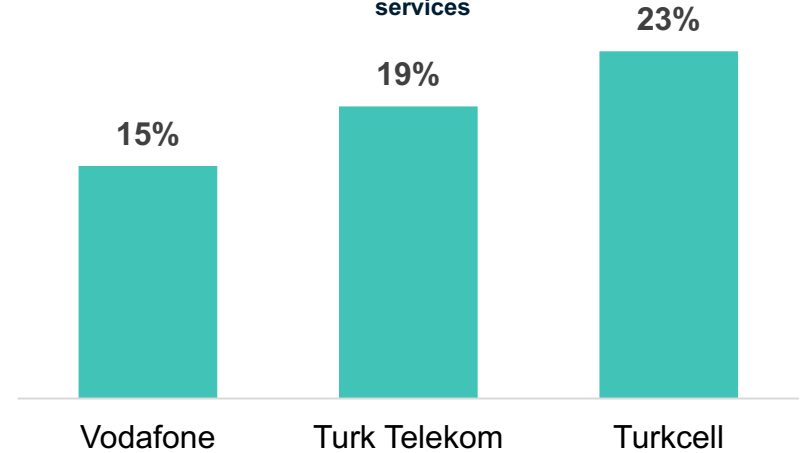
Turkey: Data and digital services drive revenue growth

Turkcell: digital strategy is paying off
Share of service revenue



- 4G adoption has doubled in the last two years to nearly 4 in 5 connections – the highest adoption rate in MENA. On average, mobile data now accounts for the same share of service revenues as voice in 2013.
- Turkcell diversification in to digital services is paying off; mobile ARPUs grew 18% y-o-y Q318 and the contribution of VAS to service revenues has tripled in the last two years.

Double-digit revenue growth in Q3 2018 (-y-o-y)
on growing demand for data and digital services



- Demand for multiplay offerings and new infrastructure investments is driving fixed broadband growth; Turk Telekom added over 800k fibre subscriptions Y-o-Y in Q318.
- Depreciation of the lira could drive inflation and squeeze household spending, with implications for the telecoms sector.

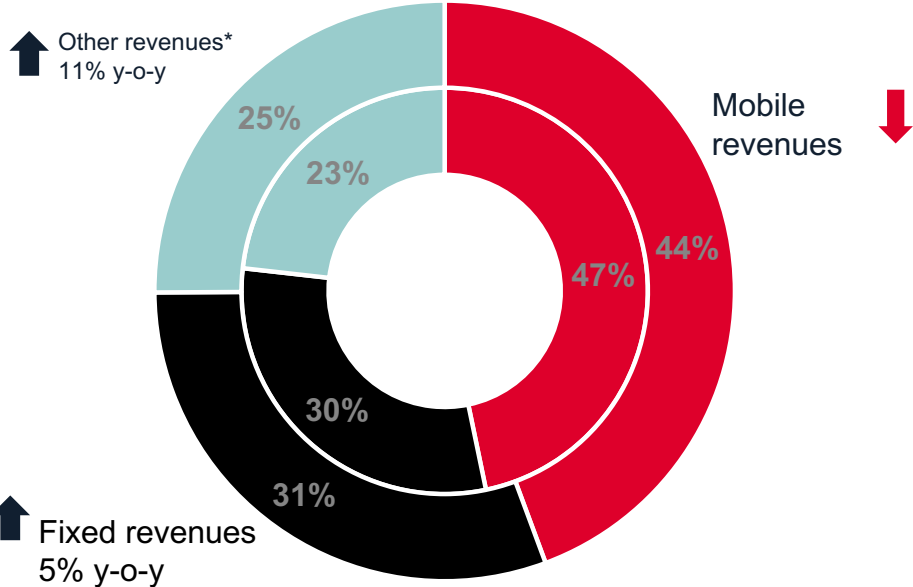


UAE: ICT services offer opportunities for growth

ICT services account for a growing share of total revenues

Etisalat and du combined revenues

Q3 2017 (inner) – AED10.78bn
Q3 2018 (outer) – AED11.12bn } ↑ 3% y-o-y



- ICT services for government and enterprises is the main growth driver for 'other' revenues, which now accounts for a quarter of total revenues.

- This trend will continue as operators strengthen their cloud-based offerings, IoT applications, and smart city solutions to meet the growing demand for enterprise solutions.

- Mobile revenues will remain under pressure from market saturation and increasing service cannibalisation by IP voice and messaging services, but digital services offer upside potential.

- 4G adoption (28%) lags smartphone adoption (85%) by a significant margin, underlining the need for infrastructure, content and pricing strategies to boost 4G uptake.

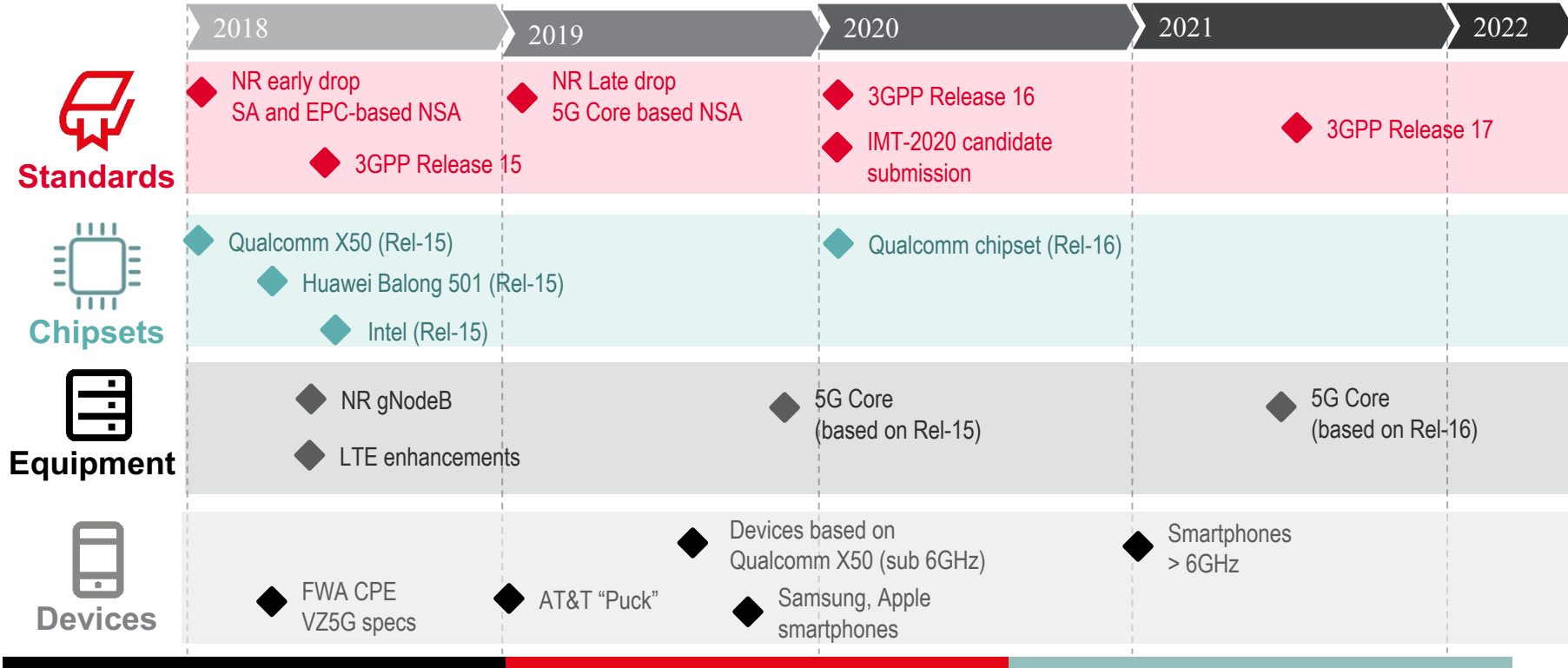
- Ambitious real estate and infrastructure investments are the key growth drivers for fixed-line services; at 94.3%, UAE has the highest FTTH/B household penetration in the region.

- Demand for digital services is also rising in the consumer and enterprise segments, offering opportunities for fixed-mobile convergence.

*includes ICT, managed services, wholesale, visitor roaming and handsets



5G Technology roadmap





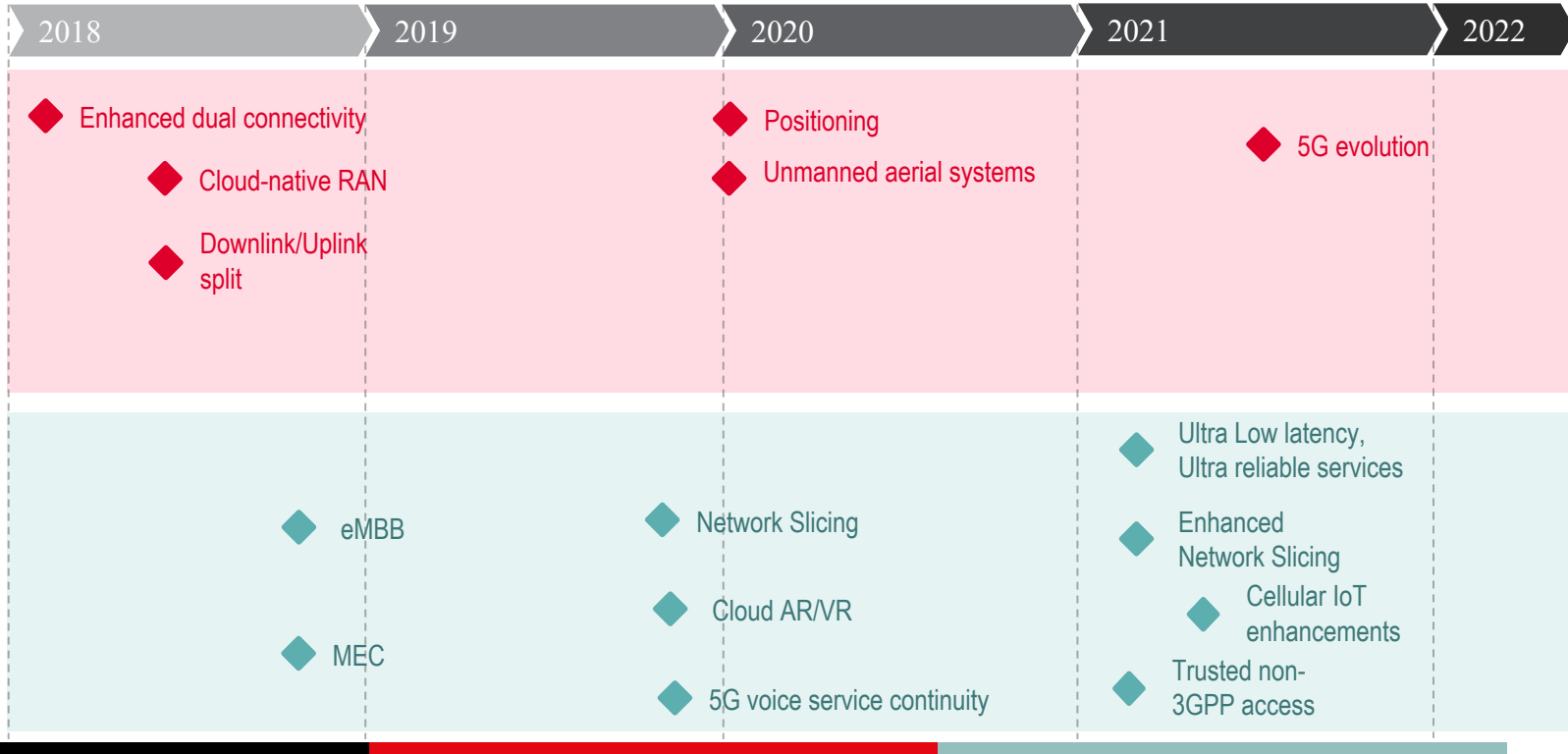
5G Technology roadmap



Radio layer features

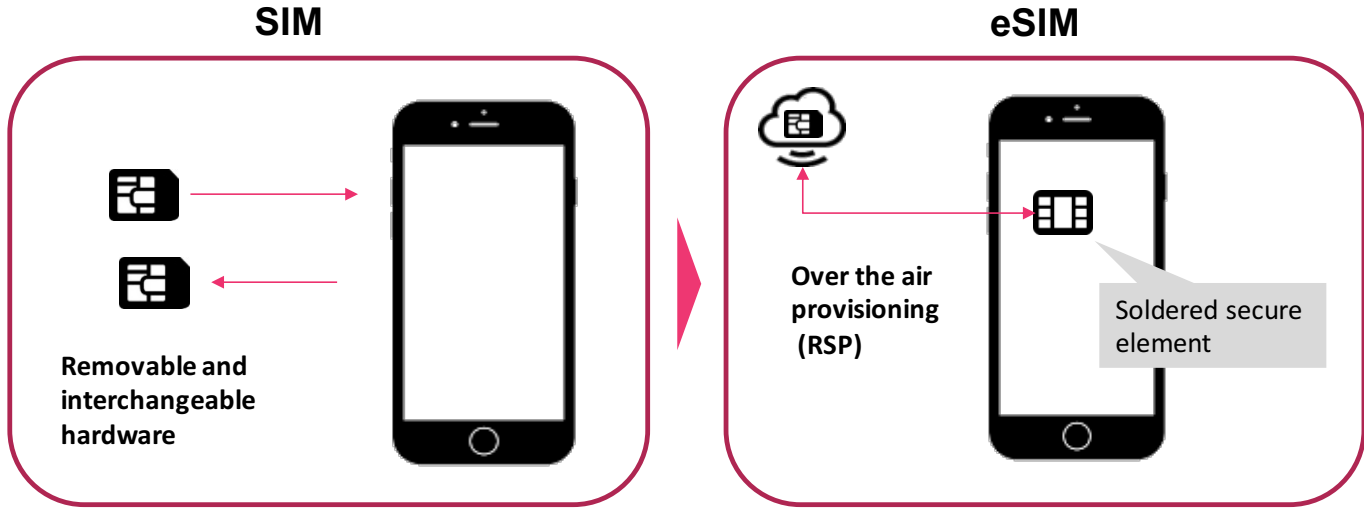


Service layer features





SIM and Remote SIM Provisioning





Industry Collaboration



80+ MAJOR INDUSTRY PLAYERS SUPPORT THE INITIATIVE

avea, axiata, at&t, altair, COMPRION, ERICSSON, evolving SYSTEMS, FIME

bouygues, 中国移动通信 CHINA MOBILE, 中国电信 CHINA TELECOM, gemalto, GE, Giesecke & Devrient, Hewlett Packard Enterprise

China unicom 中国联通, cloud9, 三星 SAMSUNG, 中国移动通信 CHINA MOBILE, Deutsche Telekom, HUAWEI, intel, Infineon, LG, Life's Good

docomo, E, GIGASKY WORLD MOBILE DATA, KDDI, MEDIATEK, Microsoft, NOKIA, OASIS

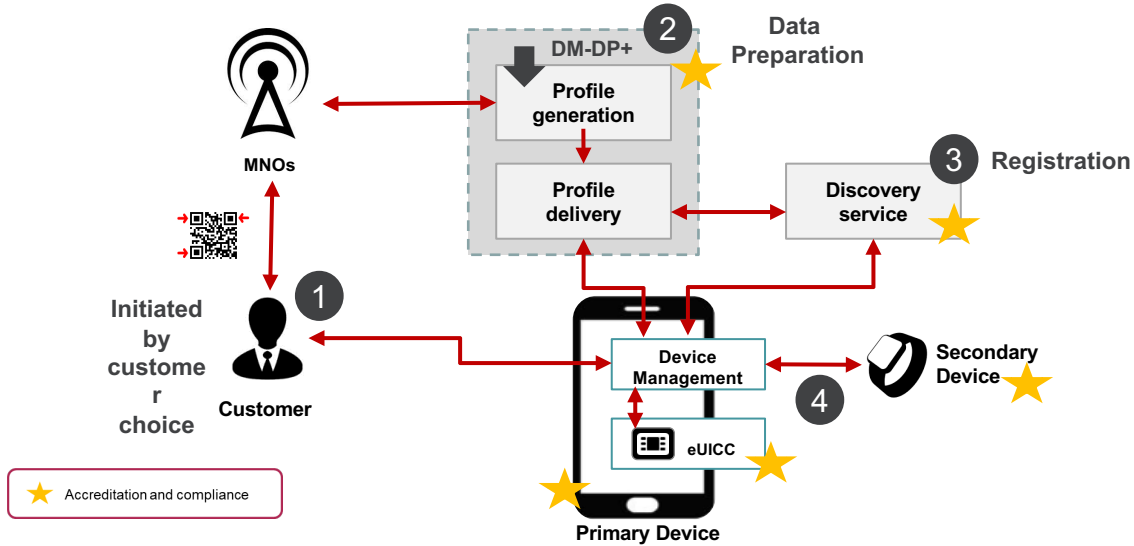
kpn, orange, ROGERS, sim LOCAL, swisscom, IDEMIA, QUALCOMM, SAMSUNG

SFR, Sprint, Telefonica, T, telenor, Telia, TIM, SONY, ST

truphone, lo3, transtelecom, verizon, vodafone, arm, UL, VALID, mi

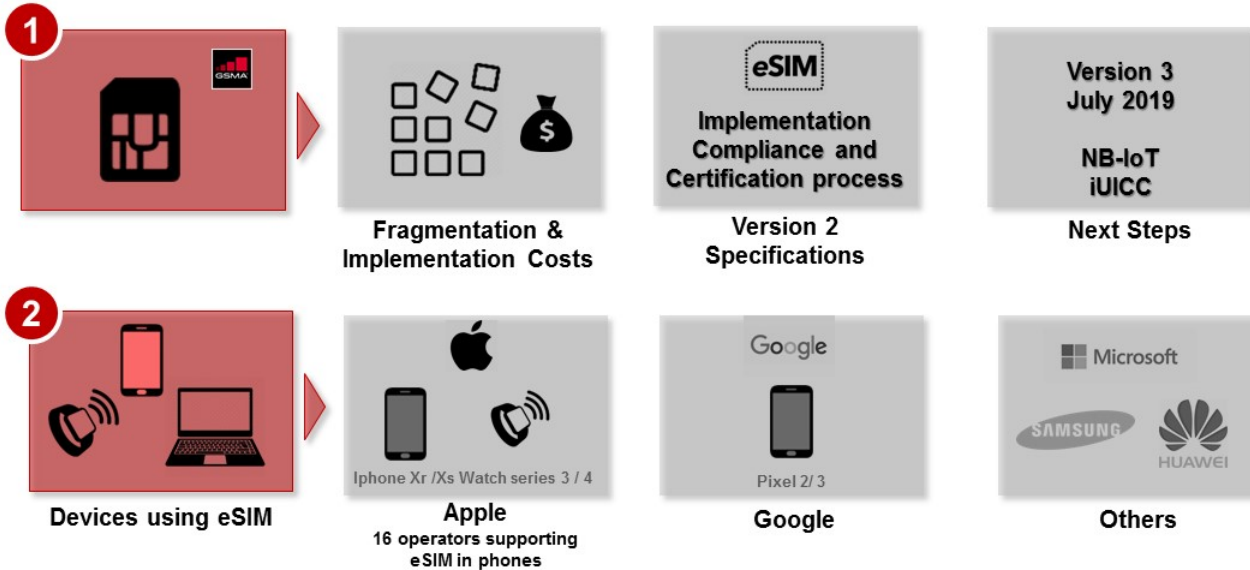


Consumer Remote SIM Provisioning high level architecture





Consumer Remote SIM Provisioning high level architecture





eSIM is real

eSIM





Q & A

