
Region in Focus

Middle East and North Africa, Q4 2019
Enterprise services a key growth area

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Mobile revenue growth under pressure

- Revenue growth from traditional mobile services is coming under increasing pressure because of price competition and market saturation, particularly in the highly penetrated GCC markets. Driven by data services, some frontier markets, such as Tunisia and Sudan, recorded strong mobile revenue growth in local currency terms, but these markets were impacted by significant currency depreciation in the last year.
- 2020 will largely be defined by the Covid-19 pandemic. It is still too early to assess the impact on the telecoms industry in the Middle East and North Africa, but countries that welcome a large number of temporary visitors every year, such as Saudi Arabia and the UAE, are likely to be more susceptible to travel restrictions caused by the outbreak.

Enterprise segment takes centre stage

- The enterprise segment has become a focus area for operators in their bid to develop new revenue streams amid slow growth in the consumer segment. Across the region, operators are investing in data-centre facilities and developing new enterprise use cases to take advantage of emerging growth opportunities.
- 5G will play a vital role in operators' strategies for enterprise services. To maximise this opportunity operators will need to develop new high-value services that meet key enterprise requirements, such as ultra-low latency. Edge computing will be crucial for delivering many of these new services, as demonstrated by Etisalat's partnership with Microsoft to enable applications over its 5G network related to smart cities, autonomous systems, gaming, AR/VR and IoT.

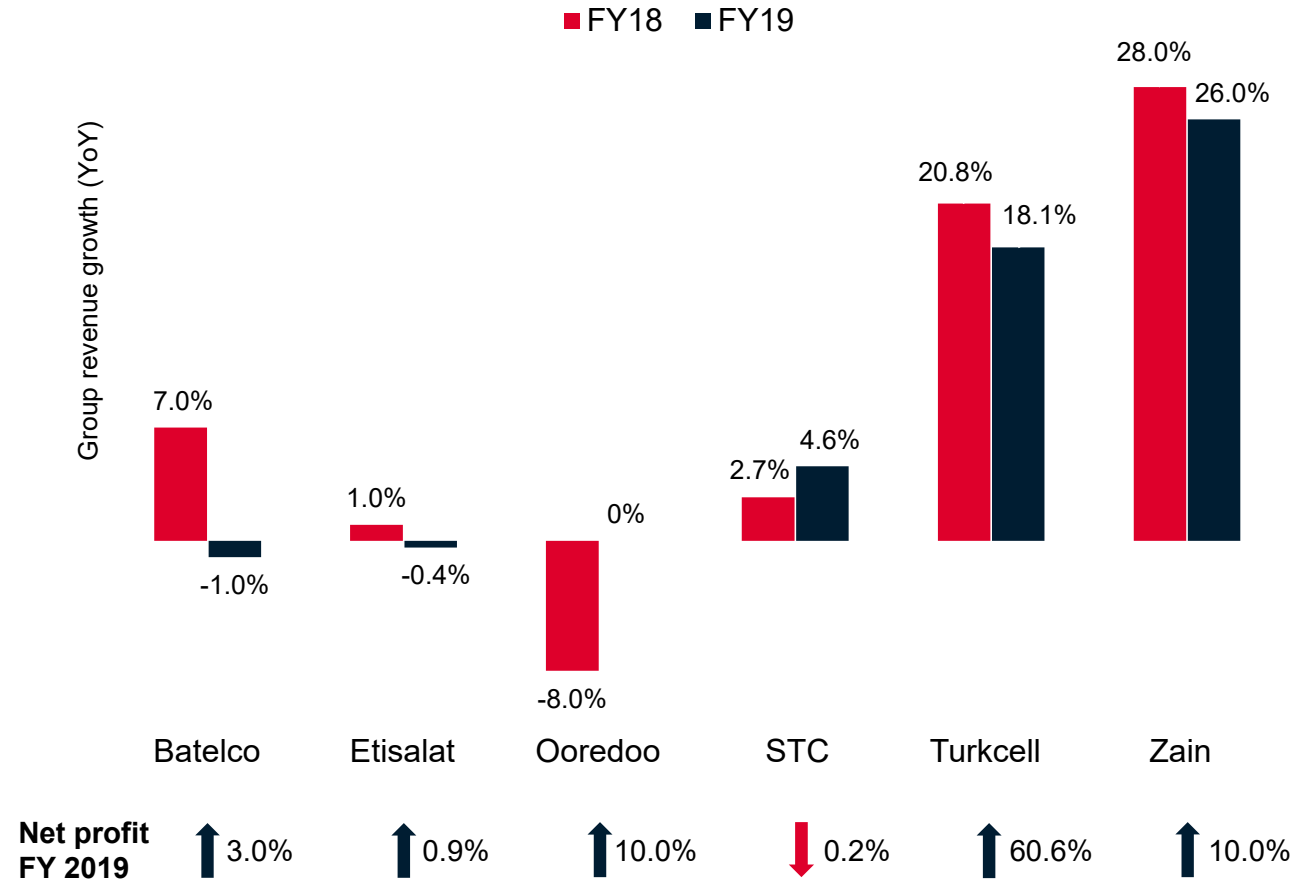
Operators step up cost-rationalisation efforts

- Several operators in the Middle East and North Africa have recently announced open RAN trials and deployments. This is in line with a growing trend of cost rationalisation in the region as operators seek ways to improve their bottom lines against a backdrop of slowing revenue growth. Beyond open-network solutions, Zain has completed the first tower sale and leaseback deal in the region, which could result in lower operating expenses.

Regional market trends: a mixed financial picture

- FY 2019 was a mixed year for telecoms operators across MENA: broadly, revenue growth declined compared to FY 2018, while net profit largely remained positive, albeit to varying degrees.
- Zain's strong revenue growth is attributable to its operations in Saudi Arabia, with data services at the heart of the operator's strategy.
- Turkcell's revenue growth reflects its success in monetising a broad range of digital services; in 2019, digital services accounted for nearly 5% of its domestic revenue.
- Net profit was positive overall because of cost-rationalisation efforts. In February 2020, Zain completed the region's first tower sale and leaseback deal involving 1,620 towers, a move that could help streamline operating costs.
- The significant rise in Turkcell's net profit was primarily driven by one-off factors, including lower net foreign exchange losses after hedging and proceeds from the sale of its shares in Fintur in April 2019.
- Given the increasing saturation in mobile markets across the region, particularly in the GCC Arab states, operators are seeking new revenue streams – momentum for enterprise services is growing as a result.
- 5G is set to play a vital role in enabling new enterprise services. Commercial 5G is now available in five countries in the region and we expect more countries to see their first commercial networks in the coming years.

Total revenue and net profit growth (YoY) of selected MENA operators



Source: GSMA Intelligence, company reports

Regional market trends: a diverse connectivity landscape

Total connections

645m

Including

35m licensed cellular IoT connections

Smartphone connections

376m

58% adoption rate

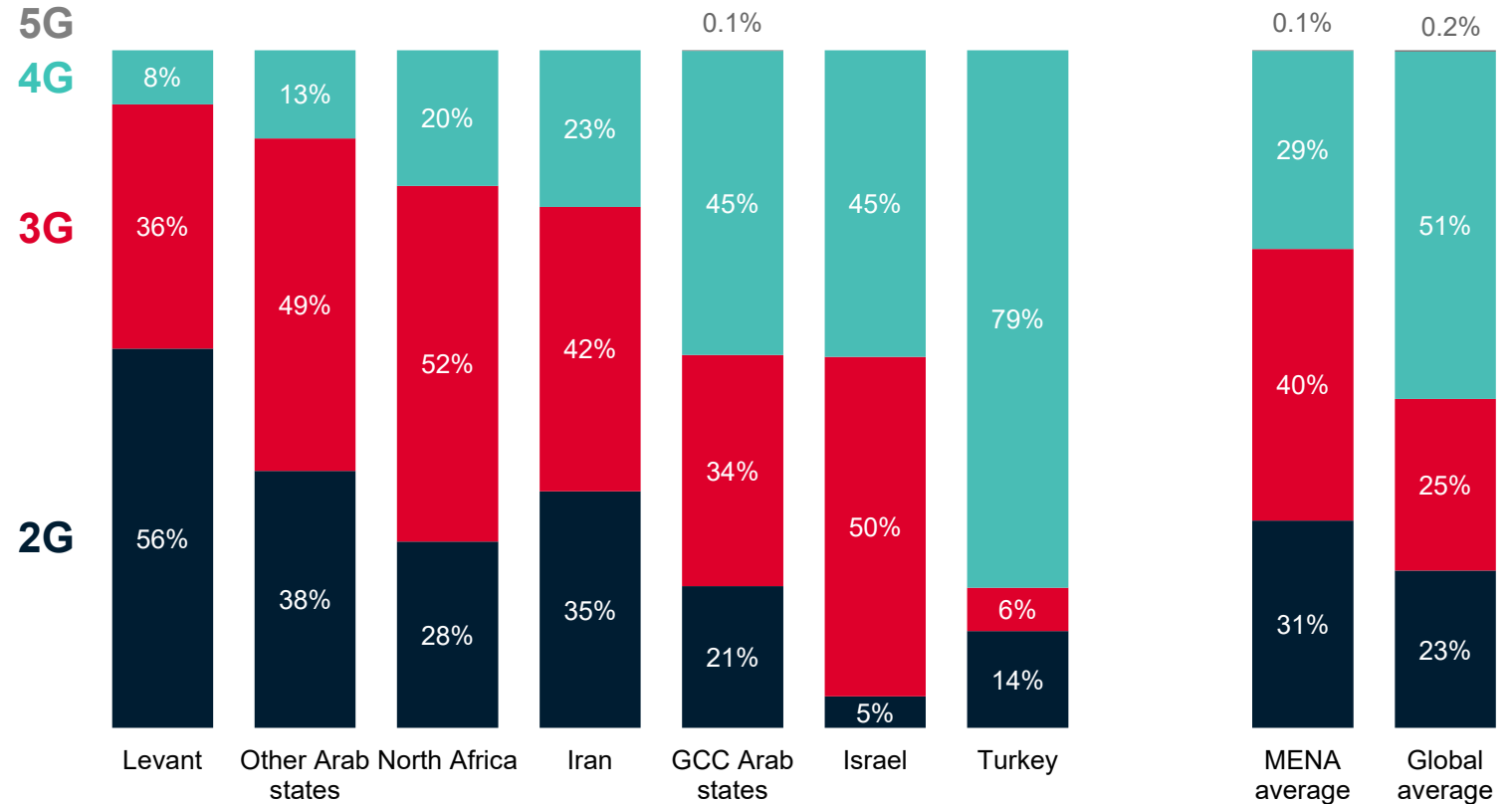
ARPU per connection

\$10.7

Global average

\$8.11

Technology mix (% of total connections)*, 2019



Levant: Iraq, Jordan, Lebanon, Palestine, Syria

Other Arab States: Comoros, Djibouti, Somalia, Sudan, Yemen

North Africa: Algeria, Egypt, Libya, Mauritania, Morocco, Tunisia

GCC Arab States: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE

*Excluding licensed cellular IoT.

Source: GSMA Intelligence

Technology

Oman: Oman's Telecommunications Regulatory Authority has given Huawei the green light to work on a number of 5G use cases. As part of Oman's ambitious 5G roadmap, Omantel and Ooredoo plan to deploy around 4,400 5G base stations in the next five years.

Ooredoo: Ooredoo has deployed Ericsson Spectrum Sharing (ESS) technology in Qatar. ESS allows 4G and 5G to be deployed in the same band and on the same radio through a software upgrade, improving 5G coverage, spectrum efficiency and user experience. Ooredoo launched 5G on the 3.5 GHz band in Doha and expects ESS to facilitate smooth and cost-efficient nationwide rollout. Additionally, Ooredoo has partnered with Huawei to deploy 5G networks in five countries, including Kuwait, Oman and Tunisia, over the next five years.

Egypt: Orange has partnered with open-source firm Red Hat to deploy a cloud platform to support its virtualised network functions. This will allow Orange to manage live customer traffic from more than 30 million connections over a fully software-based platform.

Regulatory

Morocco: In February 2020, Maroc Telecom was fined MAD3.3 billion (\$344 million) by the telecoms regulator ANRT. A statement by the regulator accused Maroc Telecom of "preventing or delaying competitors' access to unbundling and fixed market". In 2018, Inwi filed a complaint to the regulator claiming that Maroc Telecom had refused Inwi access to its infrastructure.

Egypt: The Egyptian Competition Authority (ECA) has said that it will consider a request filed by Vodafone Egypt to consider whether shareholder Telecom Egypt has the right to claim pre-emption over the potential sale of a majority stake in the company. In January 2020, Vodafone Group signed a preliminary deal to sell its 55% stake in the Egyptian unit to Saudi Arabia's largest operator, STC, for \$2.4 billion.

Saudi Arabia: The telecoms regulator and all six telecoms service providers in Saudi Arabia have signed an open-access agreement guaranteeing the provision of FTTH broadband on an open-access model. This allows subscribers to select a service provider independent of fibre-infrastructure ownership.

Competition

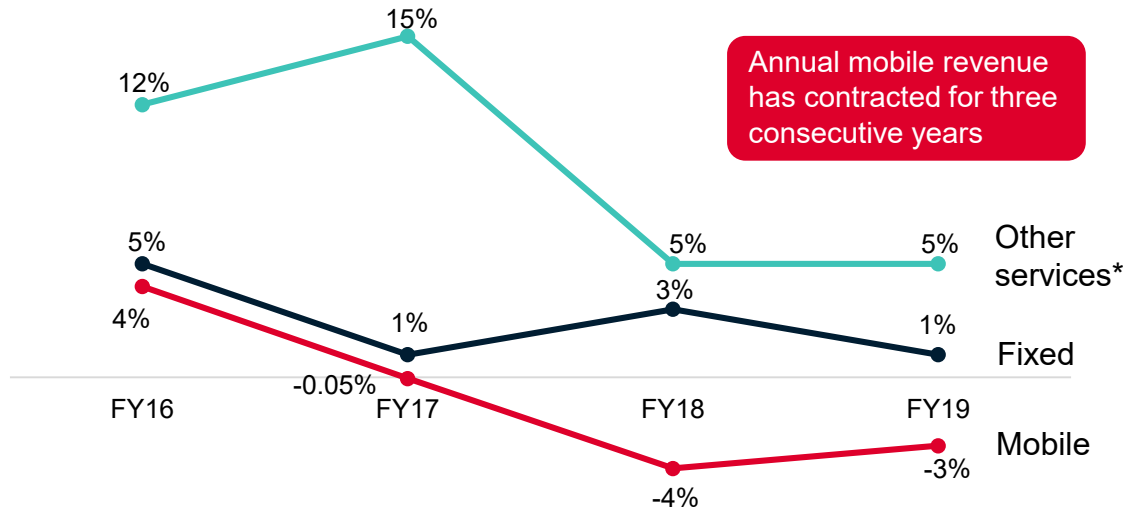
Saudi Arabia: STC has launched a 5G smart campus to facilitate the development of use cases and service standards for enterprises in different verticals, including energy, education, health and mining. The enterprise segment presents considerable 5G revenue growth opportunities for operators.

Kuwait: Zain has completed the sale of its telecoms tower infrastructure in Kuwait to IHS for \$130 million. The deal will see Zain lease back access to its 1,620 mobile towers in the country. This marks the first completed tower deal in the region following previous unsuccessful attempts. By monetising tower assets, operators can increase liquidity, reduce opex dedicated to tower maintenance, and focus on their core business.

Jordan and Morocco: Orange has launched its mobile e-wallet service, Orange Money, in Jordan and Morocco. Users can top up mobile accounts, shop online, pay bills and cash in/out through an extensive network of distribution points. Orange Money is also available in Egypt and Tunisia.

Etisalat: enterprise segment offers growth opportunities

Domestic revenue growth by segment, YoY

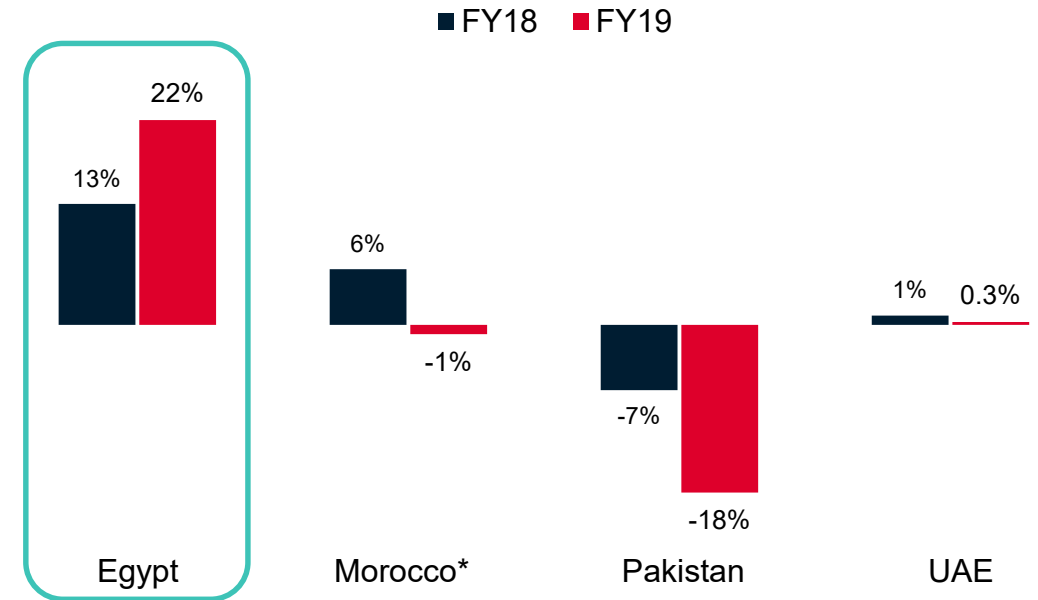


*includes ICT, managed services, wholesale and handsets

GSMA Intelligence, company reports

- Etisalat’s domestic mobile segment continues to underperform other revenue segments, reflecting the high market saturation and slow adoption of higher-value services by segments of the consumer base, particularly migrant workers.
- Etisalat introduced new services in 2019 to drive non-communication mobile revenues, such as services for digital payment and cloud gaming.
- There appears to be a growing emphasis on the enterprise segment, as the operator is building partnerships to develop 5G-centric solutions for enterprises.

Revenue growth by market (AED), YoY



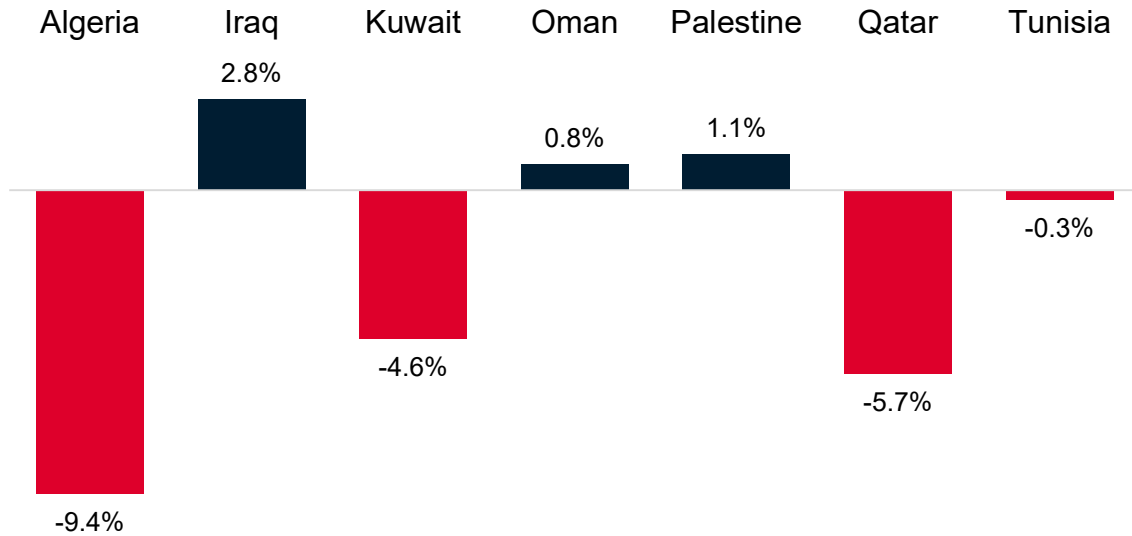
*Maroc Telecom’s figures include Benin, Burkina Faso, CAR, CDI, Chad, Gabon, Mali, Mauritania, Niger and Togo

GSMA Intelligence, company reports

- Egypt remains Etisalat’s best-performing international market, bucking the trend in FY 2019 with revenue growth for the year rising above 20%.
- Growth in the Egyptian market is fuelled by strong demand for mobile data services, as the operator continues to expand its 4G network across the country.
- The impact of Etisalat Egypt’s results on overall performance, however, remains limited considering that Egypt accounts for less than 7% of consolidated revenue.

Ooredoo: capex increases despite slow revenue growth

Revenue growth by market (QAR), YoY

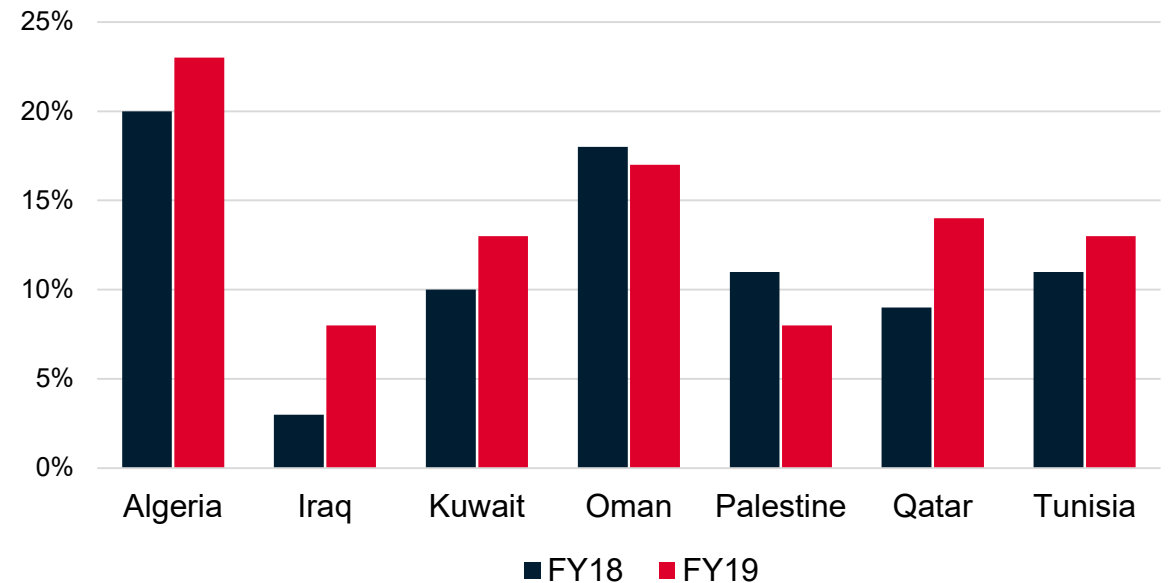


Source: GSMA Intelligence, company reports

- Ooredoo recorded negative revenue growth in most of its markets across the region in FY 2019. Algeria was impacted by intense competition and currency depreciation, while market saturation and slowing handset sales were key factors in the Gulf markets.
- In Tunisia, revenue grew by 7% year on year in local currency terms, helped by strong data revenue growth and rising uptake of new digital services.
- Iraq has significant potential for future growth from 4G, with ongoing investment in 4G infrastructure in anticipation of the award of 4G licences in the country.

- Despite weak revenue growth across many markets, Ooredoo ramped up its capex in FY 2019, underlining its 4G and 5G ambitions across the region.
- Its capex/revenue ratio rose in all markets with the exception of Oman and Palestine. Algeria, Iraq and Qatar saw the biggest increases.
- In February 2020, Ooredoo partnered with Huawei to deploy 5G networks in Kuwait, Oman and Tunisia over the next five years. Ooredoo has launched 4G in all 48 provinces in Algeria and is investing to reconnect liberated areas in Iraq.

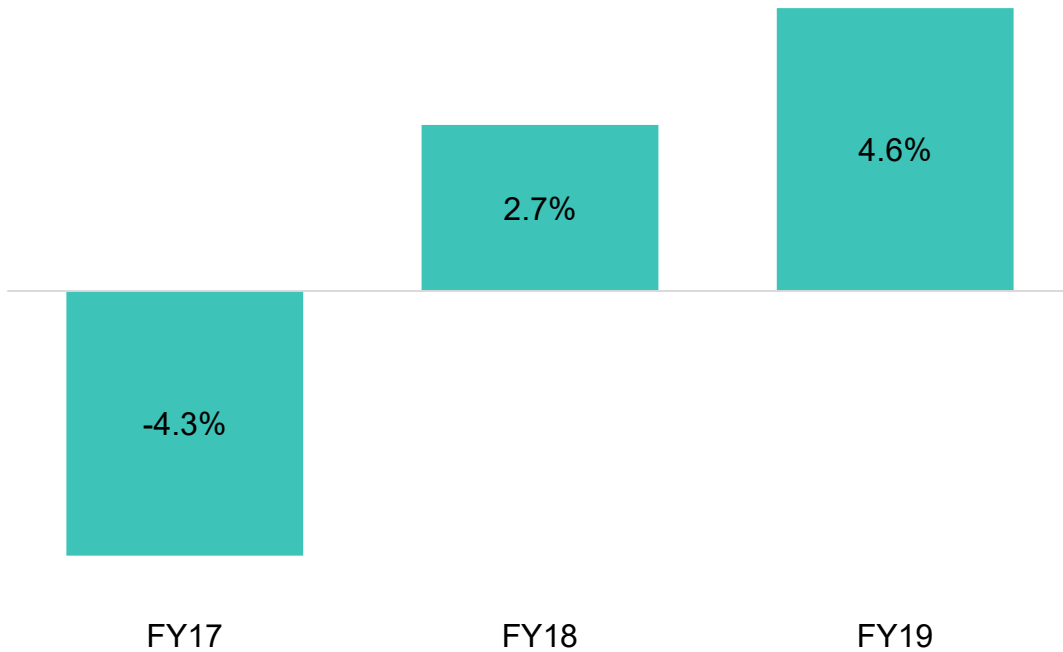
Capex/revenue ratio by market



Source: GSMA Intelligence, company reports

STC: mixed financial results, but the outlook is bright

Revenue growth (YoY) and net profit margin



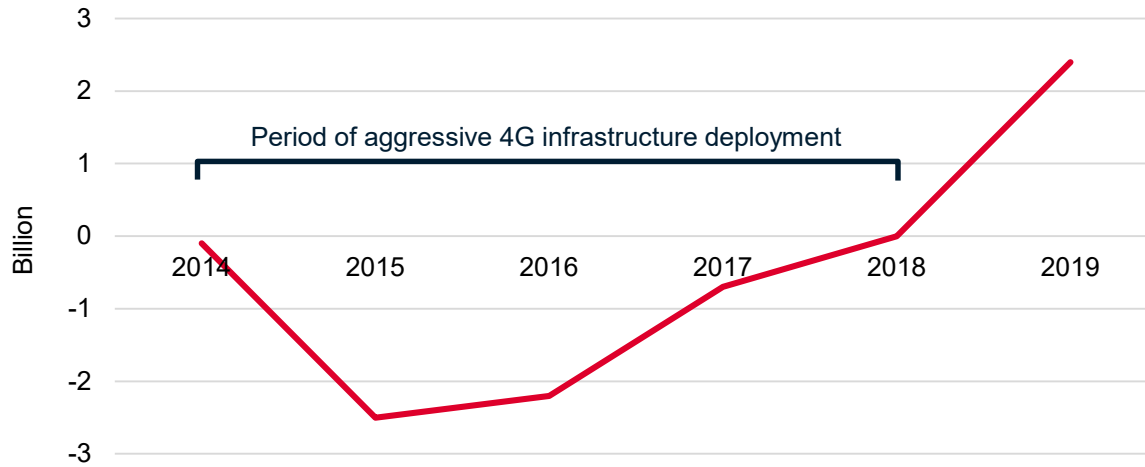
	FY17	FY18	FY19
Net profit margin	20.0%	20.7%	19.8%

Source: GSMA Intelligence, company reports

- At 4.6%, STC's year-on-year revenue growth in FY 2019 is the highest it has been since 2013, and it underscores the operator's increasing focus on enterprise services to offset the growing downward pressure on the mobile segment.
- 5G is central to STC's incremental growth strategy in the enterprise segment: STC's smart campus, launched in February 2020, is expected to lead the development of new standards and use cases for a wide range of verticals.
- However, STC's bottom-line performance in FY 2019 did not match its top-line result, with its net profit margin trending downwards during the year.
- In Q4 2019, STC's net profit margin declined by 22% year on year, weighed down by the operator's investments in network infrastructure, particularly 5G and fibre.
- STC will expect these investments to pay off in the coming years through an improved ability to offer high-value services for consumers and enterprises.
- Saudi Arabia's government, under its Vision 2030 plan, is implementing a national strategy to diversify its economy and move away from its dependence on oil. Several initiatives under this plan rely on enhanced connectivity, creating growth opportunities for service providers.

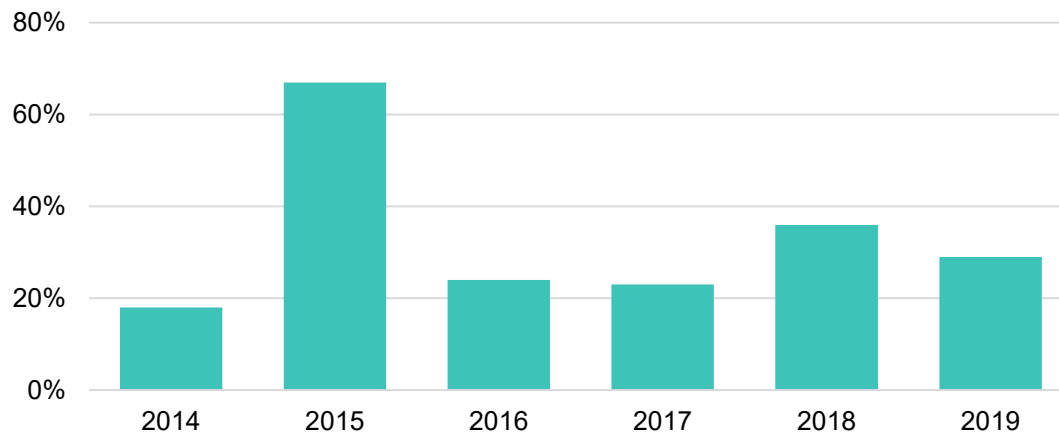
Turkcell: data strategy paying off as FCF turns positive

Annual free cash flow (TRY)



Source: GSMA Intelligence, company reports

Capex/revenue ratio

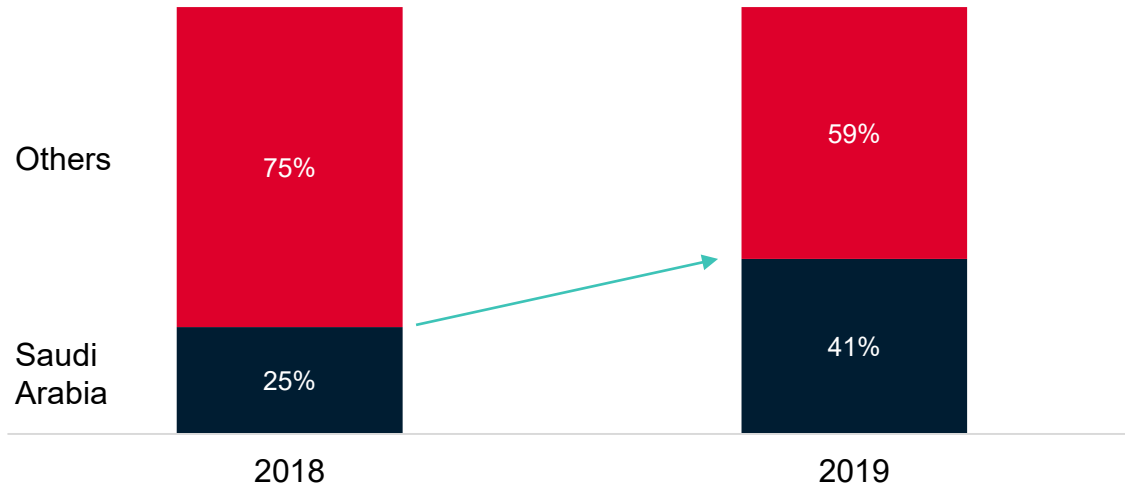


Source: GSMA Intelligence, company reports

- A highlight of Turkcell's FY 2019 results is the return to positive free cash flow, amounting to TRY2.4 billion (\$380 million), following negative figures between 2014 and 2018.
- The decline in that period was primarily due to Turkcell's aggressive buildout of 4G infrastructure; the operator's capex/revenue ratio reached 67% in 2015 and has since remained above 20%.
- This investment is paying off: Turkcell has recorded strong revenue growth in the last few years, reaching 18.1% year on year in FY 2019.
- Mobile data is a key growth driver for the operator. In Q4 2019, mobile data usage grew 53% year on year to 9 GB per user. This helped drive its 22.7% year-on-year growth in mobile blended ARPU.
- The data-centric strategy is also facilitating efforts to improve the quality of subscriptions: the proportion of postpaid subscriptions on Turkcell's network increased from 42% in 2014 to 62% by the end of 2019.
- Beyond data, Turkcell continues to experience considerable success with its digital services strategy, with standalone revenue of TRY1 billion (\$158 million) in FY 2019.
- The coming years will see Turkcell transition to 5G, with further growth expected in enterprise services.

Zain: Saudi Arabia serves as a bright spot

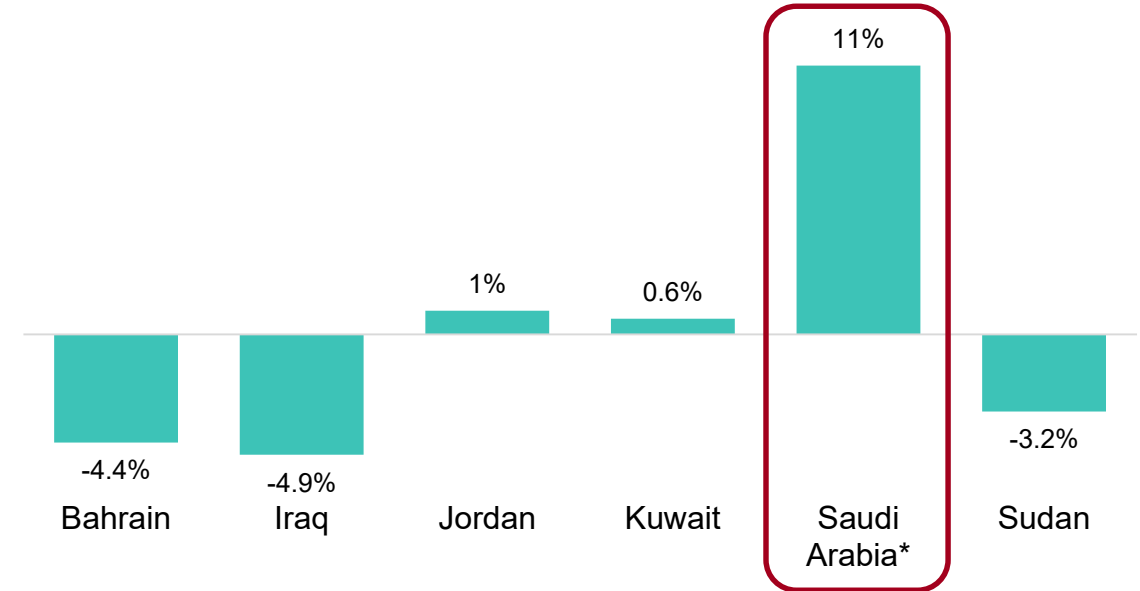
Zain Saudi Arabia's share of consolidated revenues



Source: GSMA Intelligence, company reports

- Saudi Arabia accounted for 41% of Zain's revenues in FY 2019, a significant increase from just 25% a year earlier. This highlights the growing importance of the Saudi Arabian market to Zain's operations.
- Zain Saudi Arabia's impressive results hinges on the provision of high-value services to enterprises and individual customers.
- Zain Saudi Arabia deployed 2,600 5G cell sites across 27 cities in the first phase of its 5G rollout. This will play a key role in its future data-centric strategy.

Revenue growth (KWD), YoY



*revenue growth in SAR

Source: GSMA Intelligence, company reports

- Slow revenue growth in other markets was caused by a variety of factors, including market saturation in Bahrain and Kuwait and macroeconomic challenges in Iraq and Sudan.
- In Sudan, growing data uptake led to a strong 43% year-on-year revenue growth in local currency terms, but this was impacted by a 30% currency devaluation.
- The decision to divest assets in Kuwait could enable Zain to streamline costs and reduce the impact of slow revenue growth on bottom-line figures.

Open RAN gains foothold in MENA

- Open networks and disaggregated solutions are gaining momentum globally as the number of trials and deployments grows.
- The two most popular open-network initiatives are the Telecom Infra Project's (TIP) OpenRAN and the O-RAN Alliance. In February 2020, the two organisations announced an agreement to ensure they are aligned in developing interoperable disaggregated network solutions.
- There are a number of factors driving open-network solutions, including cost pressure on operators amid slowing revenue growth and the need to meet coverage obligations in hard-to-reach areas. This is especially relevant in the Middle East and North Africa, where deploying conventional infrastructure in rural areas can be challenging.
- Open-network solutions also provide operators with more choice and pricing privilege while reducing vendor lock-in and over-reliance on a small number of vendors.
- By decoupling hardware and software, open RAN solutions could increase efficiency in the rollout and maintenance of networks. As the world moves into the 5G era, operators face the challenge of running multiple technologies and disaggregated solutions could ease the associated cost and complexity of this.
- One of the implications of open-network initiatives for the network-solutions ecosystem is the emergence of new vendors and solution providers, such as Samsung, AltioStar, Mavenir and Parallel Wireless.
- Incumbent vendors such as Ericsson, Huawei and Nokia are taking a backseat – for now. Their response to the growing momentum behind open RAN technology will be interesting to see. It is likely they will attempt to maintain their share of the network-solutions market through more competitive offerings.
- Despite the growing take-up of open-network solutions, traditional vendors will remain dominant for the foreseeable future, especially in the deployment of 5G.

Examples of open-network developments in MENA

Etisalat has partnered with Parallel Wireless to trial 2G, 3G, 4G and 5G OpenRAN across its markets in Middle East, Asia and Africa. Parallel Wireless says it offers the only “All G” OpenRAN solution, converging 2G, 3G, 4G, and 5G on one unified software platform and removing the need to maintain legacy networks dedicated to a single technology. The software-based approach will enable Etisalat to deploy systems with virtualised 2G, 3G and 4G technology that is upgradable to 5G. This will allow the operator to run different technology generations simultaneously on the same base stations, providing data and voice services to customers in both urban and rural locations.

Turkcell has partnered with Mavenir to test and deploy an OpenRAN virtual RAN (vRAN) system. The vRAN solution will be deployed on Turkcell's Telco Cloud and will be the first workload that will be going live on Turkcell Edge Cloud. The Mavenir vRAN architecture and platform can support 4G and both the standalone and non-standalone implementations of 5G new radio (NR). It can also support massive MIMO, edge micro services and network slicing for 5G NR. Turkcell has reached more than 60% virtualisation in its mobile core network and it sees OpenRAN as the next step in its continued network evolution.

Vodafone announced in October 2019 that it was testing OpenRAN in Turkey, making it one of the earliest adopters of open-network solutions in the Middle East and North Africa. Vodafone is using technology from Parallel Wireless for the pilot and it expects this to reduce deployment and maintenance costs for RAN platforms.

Edge computing opens new opportunities for 5G

- Globally, edge computing is moving from concept to early-stage deployments as new use cases need a more decentralised approach to computing and networking than a traditional, fully cloud-based model.
- Edge computing can also drive demand for 5G services by providing developers an environment to create new 5G applications for enterprises, such as mission-critical IoT and flexible manufacturing, and consumers, such as cloud gaming and AR/VR.
- Consequently, edge partnerships between operators and public cloud companies are emerging in some developed markets. Recent partnerships include:
 - AWS's partnership with Verizon, Vodafone, SK Telecom and KDDI to make it easier for developers to create and deploy low-latency applications
 - Microsoft's partnership with SK Telecom to expand the Project xCloud preview and with AT&T for Microsoft Azure
 - Google's partnership with BT and Verizon to expand its cloud-gaming offering, Stadia.
- In the Middle East and North Africa, Etisalat announced the first major partnership with a public cloud company in February 2020 – a deal with Microsoft to underpin future 5G services and facilitate the evolution of its public-cloud-first strategy.
- Etisalat plans to build a digital platform on Azure that is capable of incorporating technologies such as automation and AI and that can enable new types of applications related to smart cities, autonomous systems, gaming, AR/VR, IoT, and vision-computing solutions over its 5G network.
- There are now 12 commercial 5G networks in the region and many more are expected to go live in the coming years. For operators, maximising the 5G potential depends largely on their ability to deliver new, high-value services for both enterprises and consumers.
- Edge computing will be crucial for delivering many new services that require at least one (and possibly all) of the following: ultra-low latency (usually less than 10 ms of round-trip time); real-time processing for real-time computing, rendering and analytics; high-volume data transfers; and deterministic networking.
- Partnerships between operators and public cloud providers is one way to accelerate edge computing's transition from small trials to early-stage commercial deployments.
- However, the emergence of regionally focussed task forces, such as the SK Telecom-led Bridge Alliance, and pan-regional groups, such as the 5G Future Forum (which consists of América Móvil, KT, Rogers, Telstra, Verizon and Vodafone) suggests that operators are starting to recognise the need to move more quickly to develop their own edge platforms in order to move up the edge value chain.

Operators step up data-centre investments

- There has been an uptick in the last 12 months in data-centre investments in the Middle East and North Africa as digital transformation gains traction in the region.
- Initiatives such as Smart Dubai and Smart Abu Dhabi in the UAE and Bahrain's Cloud-First Policy are driving public cloud spending as governments look for efficient and interoperable platforms to implement their digital strategies.
- Egypt, Jordan, Qatar and Saudi Arabia are among the list of other countries in the region that are implementing similar smart city and digital transformation agendas that will rely heavily on data-centre infrastructure.
- Private businesses of all sizes, including SMEs and startups, are also increasingly moving data storage and processing functions to the cloud for scalability and to improve cost efficiency.
- Meanwhile, data protection laws for certain sectors (e.g. financial services, government services and healthcare) require vendors to have their own in-country facilities, thereby driving investments in new data-centre facilities and services.
- While specialist cloud-services providers have taken the lead in data-centre investments in the region, operators are waking up to the opportunity, as evidenced by increasing operator activity in the region's fast-growing data-centre market. Below are examples of recent activities in the data-centre market.

Cloud-services providers

February 2019 – Oracle opened a data centre in Abu Dhabi, its first in the Middle East and North Africa, to offer cloud storage to customers in the region.

June 2019 – Microsoft launched cloud regions in the UAE (Dubai and Abu Dhabi). The cloud regions, which represent a first in the Middle East and North Africa, support Azure and Office 365.

July 2019 – AWS opened the first AWS Middle East Region in Bahrain, allowing organisations to run their applications and serve end users from regionally based data centres.

January 2020 – IBM launched two data centres in the UAE, its first in the Middle East and North Africa, to offer cloud-storage services.

Telecoms operators

October 2019 – Zain partnered with Whale Cloud, a subsidiary of Alibaba Group, to build, operate and maintain a public cloud platform in Saudi Arabia.

January 2020 – Orange Egypt signed a \$135 million agreement with Administrative Capital for Urban Development (ACUD) to build and operate a data centre. Zain signed an agreement with the Commercial Bank of Kuwait to provide cloud services.

February 2020 – Ooredoo announced the construction of a 600-rack data-centre facility in Oman to support the country's digital transformation agenda.

March 2020 – In partnership with Huawei, Orange Egypt launched a data-centre facility to provide cloud services in Egypt.

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