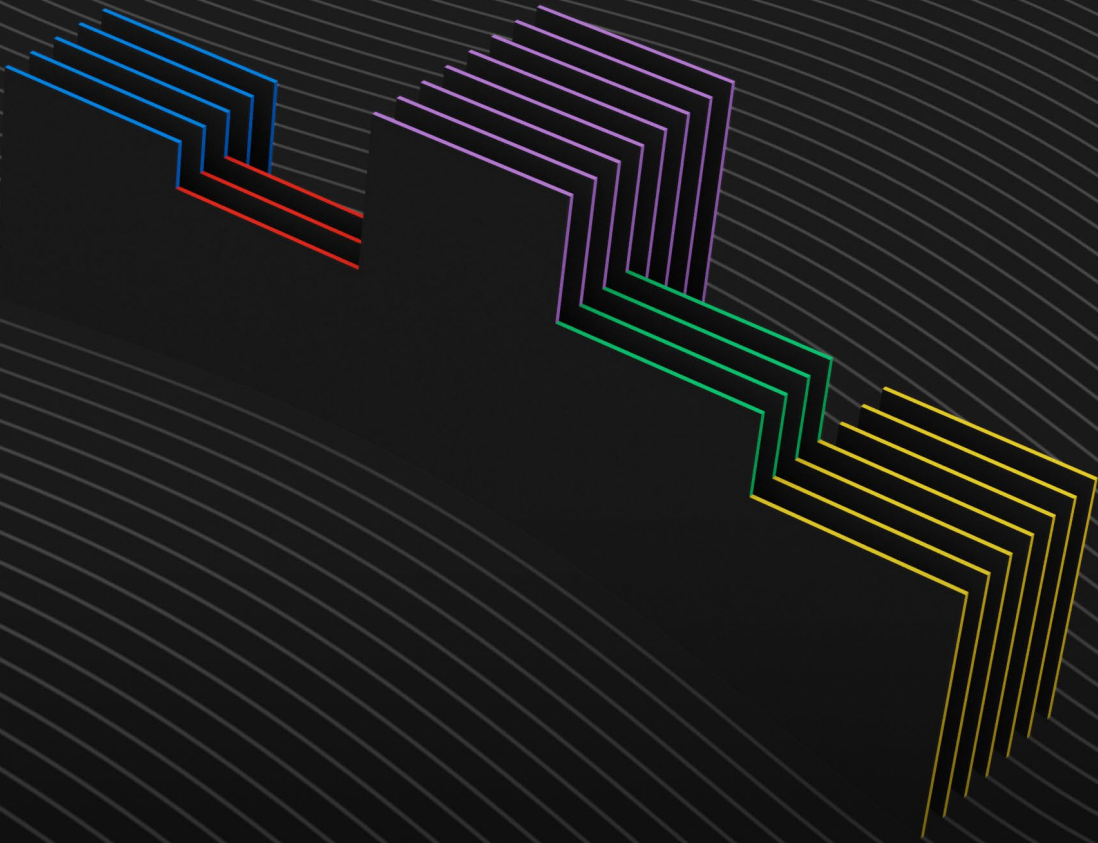




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# Network performance as a lever for business growth



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# Network performance as a lever for business growth

Leveraging network performance and customer loyalty to address growth opportunities in Sub-Saharan Africa.

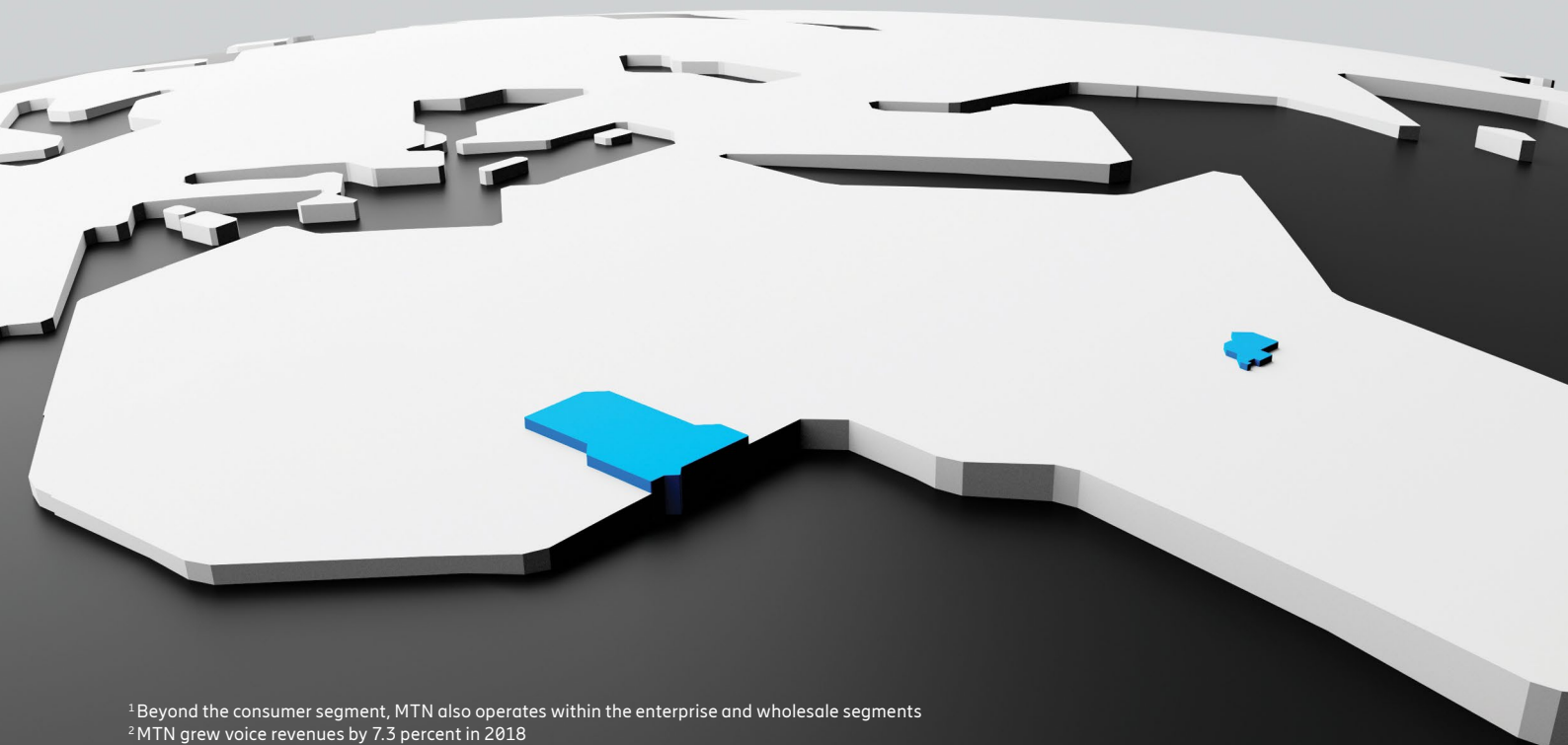
Of the global population, 13 percent lives in Sub-Saharan Africa, which is served by less than 2 percent of the mobile base stations installed worldwide. Mobile data penetration is relatively low, with data usage, smartphone penetration and 4G population coverage all only around 30 percent. However, there is increasing demand for digital services and financial inclusion, including in rural low-income areas.

Operating in 21 markets across the Middle East and Africa, MTN is pursuing 6 distinct growth opportunities, 4 of which target the consumer segment.<sup>1</sup> Voice is still a significant business, presently generating almost three times more revenue than data does for MTN. However, the data revenue market is projected to increase at a compound annual growth rate (CAGR) of

20 percent in MTN markets over the coming 3 years, while the voice revenue market is expected to decline at a rate of 2 percent over the same period. Nevertheless, MTN continues to protect and increase<sup>2</sup> its voice business, while pursuing data revenues to drive growth.<sup>3</sup> Another ambition is to increase revenues from new digital services (mobile music, advanced messaging, mobile advertising and local content). However, from its small base, an expected 50 percent CAGR will bring the market size in 2021 to only about one-tenth of that for data and voice respectively. The fourth opportunity is financial services (mobile money, banking and insurance). MTN considers data to be its core medium-term growth driver and is deploying 3G and 4G network technologies to provide sufficient data coverage in rural areas to meet increasing demand.



This article was written in cooperation with MTN, a leading emerging market communications service provider, offering a range of communications services to customers across Africa and the Middle East – one of the world's fastest-growing regions for mobile telecommunications.



<sup>1</sup>Beyond the consumer segment, MTN also operates within the enterprise and wholesale segments

<sup>2</sup>MTN grew voice revenues by 7.3 percent in 2018

<sup>3</sup>MTN grew data revenues by 22 percent in 2018

In the Sub-Saharan Africa region, mobile broadband subscription penetration of the population is approximately 30 percent, but – with a young and fast-growing population – it is forecast to reach over 50 percent by the end of 2025. With customers still early in the data adoption journey, MTN is focused on realizing its belief that everyone deserves the benefits of a modern connected life, and contributing to the UN’s Sustainable Development Goals,<sup>4</sup> which include reducing poverty, improving health and wellbeing, and stimulating economic growth.

# 50%

Mobile broadband subscription penetration in Sub-Saharan Africa is expected to exceed 50 percent by the end of 2025.

**Strategy to connect the unconnected**  
 MTN applies a “connect the unconnected” strategy, named CHASE.<sup>5</sup> It includes initiatives to build sufficient data coverage in rural low-income areas, to make data-enabled devices accessible and affordable, to promote mobile money solutions for those without banking opportunities, and to expand awareness and availability of digital services.

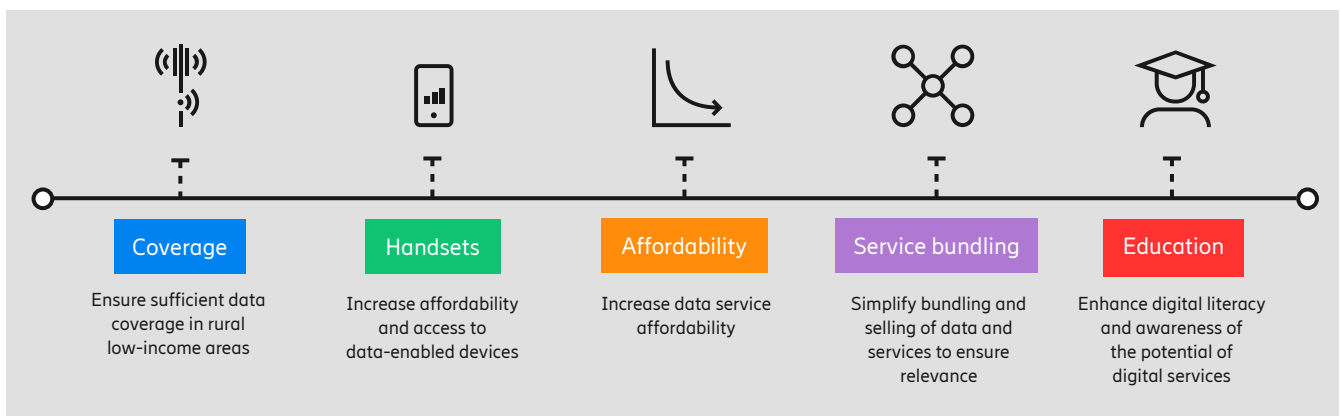
A cornerstone of MTN’s operational strategy<sup>6</sup> is to achieve best network performance in its markets by 2022. Initiatives include employing rural coverage solutions to increase 3G and 4G population coverage, plus steps to improve network quality and user experience to become a leader in network Net Promoter Score (NPS).<sup>7</sup> These initiatives support an overall objective of providing best customer experience in markets where MTN is present.

**Customer experience program: a structured approach**

MTN’s objective of improving overall customer experience is built into the entire group’s processes. In addition, there is dedicated management and governance directing central and local expertise in a program to identify network quality issues and implement appropriate improvements – reusing best practices across the different markets, including forward-looking services and recommendations for constant performance improvements.

Important measures when improving network quality are moving subscribers to the highest possible network layer, activation of key software features, removal of inconsistencies and alignment of parameters supporting selected network improvements.

Figure 23: MTN’s “connect the unconnected” strategy – CHASE



<sup>4</sup> Supporting the UN Sustainable Development Goals 1, 3, 7, 8, 9 and 17

<sup>5</sup> Coverage, Handsets, Affordability, Service bundling, Education (CHASE)

<sup>6</sup> Named BRIGHT: [www.mtn-investor.com/mtn\\_ar2017/our-bright-strategy.php](http://www.mtn-investor.com/mtn_ar2017/our-bright-strategy.php)

<sup>7</sup> NPS is a measure of the likelihood that a customer would recommend a company’s product or service.

A sample of customers is surveyed and scored between 0 and 10 then classified into three categories: promoters, passives and detractors.

Then, the percentage of detractors is subtracted from the percentage of promoters. The NPS is separated into various factors, one of which is network performance



Figure 24: MTN Rwanda – voice 3G

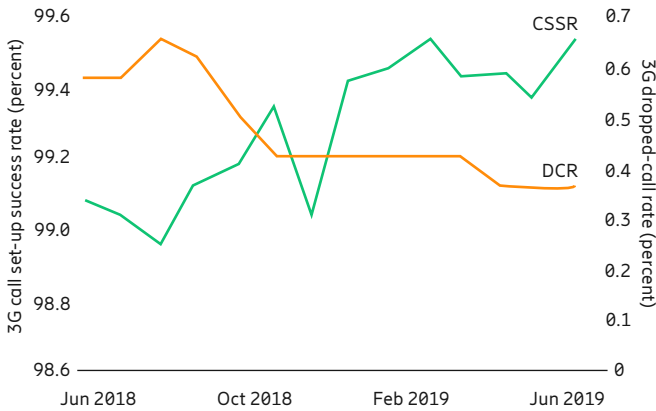
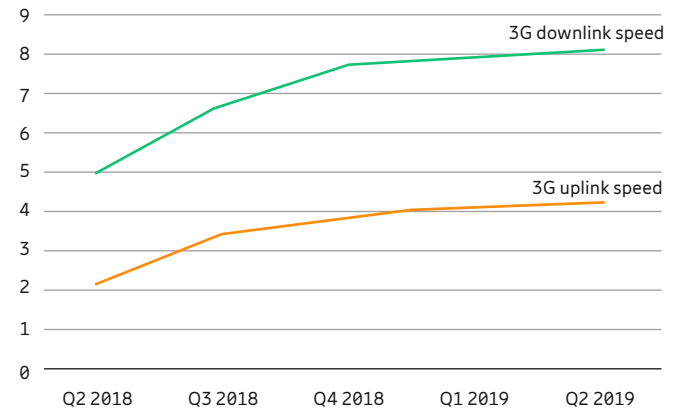


Figure 25: MTN Rwanda – data 3G (Mbps)



MTN applies this methodology in several markets across the Sub-Saharan region. Two examples are Rwanda and Ghana, which illustrate different aspects of the strategy.

**Network improvements in Rwanda**

Rwanda is a country in central Africa, with a young, mostly rural population of nearly 13 million. It is very densely populated, with an average of 460 people per square kilometer. Over 80 percent of inhabitants live in rural areas.

The mobile internet user penetration is around 40 percent in Rwanda, indicating strong growth potential for mobile broadband, addressable by expanding 3G/4G network coverage into rural and other previously under-served areas. The 3G/4G subscription uptake is forecast to be high, driven by more affordable data plans. Monthly average revenue per user (ARPU) was USD 2.24 in Q2 2019.<sup>8</sup>

Rwanda currently has a single 4G wholesale network with national roaming. Consequently, MTN's focus is to extend and improve its 3G coverage. It does this through aligning network and handset planning, and focusing on voice

stability and data growth. Economically, expanding rural coverage requires cost optimization through prioritized capex planning and opex optimization.

MTN Rwanda's 2G network carries one of the highest average loads of data traffic per site and voice traffic per subscriber in the region. In 2018, there was high growth in smartphone usage and average data consumption in the MTN Rwanda network, driven by significantly improved 3G coverage and a growing customer base with 3G/4G devices. UTMS 900MHz technology was deployed to enhance internet coverage, cater for data traffic growth and improve data speeds across the countrywide network.<sup>9</sup>

During 2019, MTN rolled out more capacity and additional sites on its 3G network to drive efficiency and better customer experience. Steps included adding software features and parameter settings to improve voice accessibility, call set-up time, and 3G data uplink coverage and capacity.

From Q2 2018 to Q2 2019, MTN Rwanda's network improvements led to positive developments across the board, with all key network indicators improving, including call set-up success rates and

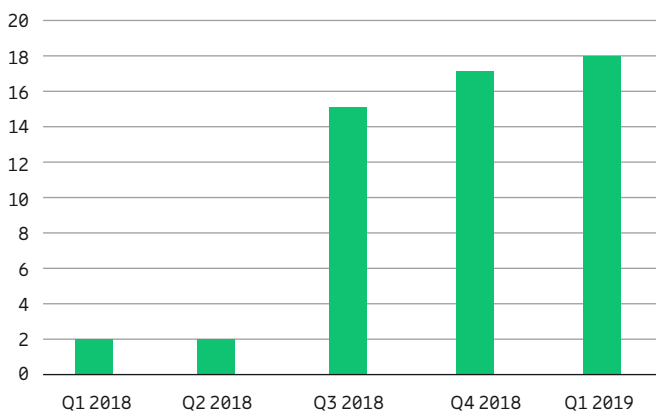
dropped-call rates. The network KPIs and data from performance monitor (PM) counters, combined with improving median uplink and downlink speeds gathered from drive tests, are correlated with the network NPS data. Recent root cause analysis of the network NPS data indicates the positive contribution of a good, reliable, strong and fast internet connection.

The network improvements and customer satisfaction increases are reflected in solid business performance for MTN Rwanda.<sup>10</sup> This includes a market share increase of 11 percentage points to 54 percent at the end of the first half of 2019, compared with the first half of 2018, as subscribers grew by 23 percent – with revenue and EBITDA up 27 percent and 24 percent respectively over the same period.

# 18%

Network NPS improved from 2 percent to 18 percent in Rwanda.

Figure 26: MTN Rwanda network NPS (percent)



<sup>8</sup> MTN reported USD 2.15 ARPU in Rwanda for Q1 2019

<sup>9</sup> 3G population coverage reached more than 90 percent at the end of 2018

<sup>10</sup> www.mtn.com/investors/financial-reporting/integrated-reports/

Figure 27: MTN Ghana – voice 3G

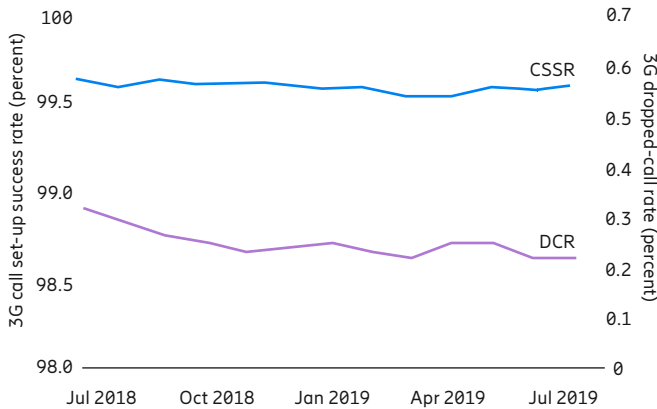
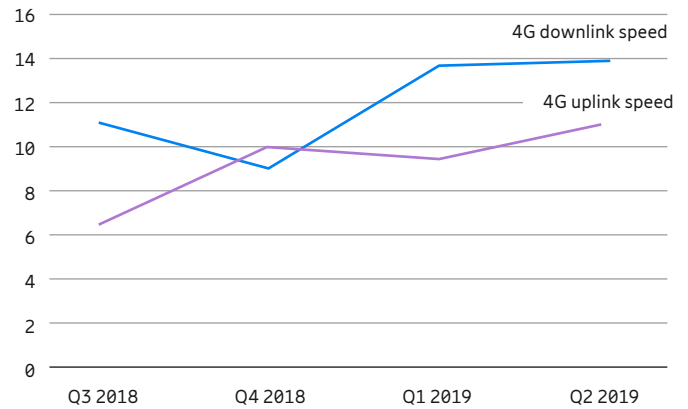


Figure 28: MTN Ghana – data 4G (Mbps)



**Network improvements in Ghana**

Ghana, in West Africa, is a nation of 30 million inhabitants with a moderate population density of 130 people per square kilometer.

The mobile internet user penetration is around 30 percent, ARPU is over USD 4 per month, and service revenues are increasing at more than 20 percent per year.

MTN Ghana network improvements during 2018–2019 have included expanding and densifying 3G and 4G, as well as optimizing each access layer in turn, steered by KPIs covering availability, retainability, quality and traffic volume.

The 4G share of devices is rapidly increasing, driving data traffic volumes, with over two-thirds of the total data traffic volume coming from 4G devices. The number of 4G devices is projected to outnumber that of 3G devices by early 2020.

With low voice tariffs, average voice traffic per device in the network is very high. Around half of voice traffic comes from 2G devices, while the 2G network carries two-thirds of voice traffic.

From Q2 2018 to Q2 2019, the MTN Ghana network improvements also led to better KPIs, including call set-up success rates and dropped-call rates.

As in Rwanda, Ghana’s KPIs were tracked along with data from PM counters, and matched with improving median uplink and downlink speeds gathered from drive tests to be correlated with network NPS data. Recent root cause analysis of these scores highlighted the positive contribution of good coverage and data speeds.

The network and customer satisfaction improvements translated into positive business results.<sup>11</sup> Comparing MTN Ghana’s first half of 2019 with the first half of 2018, voice revenue was up 13 percent, and data revenue<sup>12</sup> increased by 26 percent. Overall, in constant currency, revenues increased 19 percent and EBITDA increased 24 percent over the same time period.

**Leveraging network performance to address growth opportunities**

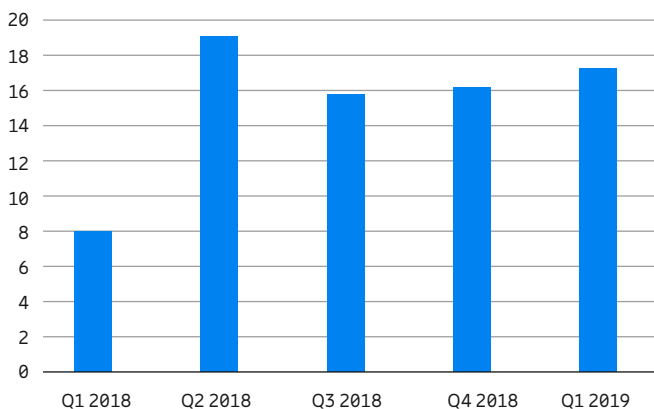
The effects of network improvements on customer loyalty are measured monthly through NPS, then disaggregated into major root causes, including network performance. NPS benchmarking illustrates how user-experience improvements translate into loyalty. The network NPS is further separated into detailed root causes to analyze contributing factors. It has substantially evolved over the

past year, allowing greater precision in assessing network improvements, and is a major component in gauging performance throughout the MTN group.

All network improvements are carried out within the context of actively lifting users to the highest network technology possible, to optimize the cost per erlang (voice) and gigabyte (data) served. Integral to this is the smart capex concept which involves ranking and prioritizing radio sites identified for improvements. The goal of smart capex is to achieve the greatest return from budgeted network investments.

From network KPIs and NPS benchmarking to business performance, both Rwanda and Ghana’s networks are improving user experience and results, while expanding further into rural areas and offering services to connect the unconnected. While much attention worldwide is focused on initial 5G roll-outs, for many regions the reality is continued demand for expanding 2G, 3G and 4G network coverage and capacity. The insight from these countries is that customer satisfaction and commercial success are not mutually exclusive but require regular and consistent processes to expand and optimize network services.

Figure 29: MTN Ghana network NPS (percent)



# 17%

Network NPS improved from 8 percent to 17 percent in Ghana.

<sup>11</sup> www.mtn.com/investors/financial-reporting/integrated-reports/

<sup>12</sup> Data revenues include internet access through mobile and fixed wireless access

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