



Wireless network data traffic: worldwide trends and forecasts 2020–2025



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About this report

This report presents 5-year forecasts of wireless data traffic worldwide, in eight regions and in selected countries. It analyses the key trends in, and drivers and inhibitors of, data traffic. The forecast dataset underpinning this report covers:

- **mobile data:** total data delivered over cellular networks, plus how much of this data is delivered to handsets (split by generation) and to fixed-wireless access (FWA) terminals
- **Wi-Fi data:** data delivered over public and private Wi-Fi connections (at home or at work), plus how much of this data is delivered to handsets.

KEY QUESTIONS ANSWERED IN THIS REPORT

- To what extent will cellular data traffic continue to grow in developed and emerging markets between 2019 and 2025?
- What are the historical trends up until 2019, and how has COVID-19 impacted data usage?
- What are the key factors that explain the significant variations in average cellular data usage in different markets?
- How much will FWA affect cellular data traffic growth in the future?
- What will be the impact of 5G on cellular data traffic trends?
- What will be the continuing role of Wi-Fi as cellular data traffic continues to grow?

GEOGRAPHICAL COVERAGE

- Central and Eastern Europe (CEE)
- Developed Asia–Pacific (DVAP)
- Emerging Asia–Pacific (EMAP)
- Latin America (LATAM)
- Middle East and North Africa (MENA)
- North America (NA)
- Sub-Saharan Africa (SSA)
- Western Europe (WE)

KEY METRICS

Mobile data

Total volume and average usage for handsets (by generation 3G,4G, 5G) and FWA.

Wi-Fi data

Total volume and average usage for handsets, split by public and private networks.

WHO SHOULD READ THIS REPORT

- Executives in strategy departments of mobile and fixed operators that want to understand future dynamics in wireless network traffic, as well as future enablers of, and barriers to, growth.
- Executives in strategy departments of network equipment vendors that need to understand how quickly wireless traffic will grow across different markets and thus, where the demand for their products may be the greatest.

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Worldwide trends: early measurements suggest that average usage levels for 5G differ greatly from those for 4G, but they will plateau quickly

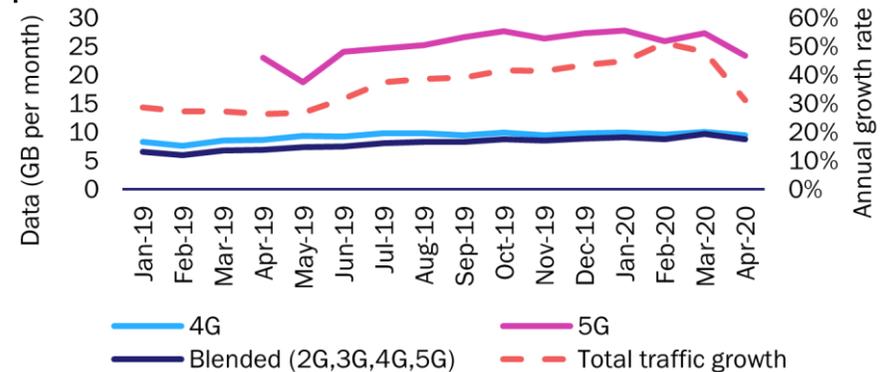
The introduction of 5G in South Korea in April 2019 led to an acceleration in the annualised traffic growth rates. This figure had been consistently in the 25–30% range prior to the 5G launches, little more than the overall IP traffic growth rate. Cellular traffic growth peaked at about 50% in February 2020 (although it has since fallen back, possibly because of the COVID-19 pandemic).

There was no link between the introduction of 5G and unlimited data packages in South Korea; these were already widely available on 4G, but are not yet available on 5G. FWA appears to have a limited role. One might therefore conclude that the additional capabilities of 5G devices do create some additional traffic; not all is a substitution of one kind of traffic for another.

There was no growth in average 5G usage in South Korea between October 2019 and March 2020 (the April 2020 figure is much lower, again possibly because of COVID-19). This stasis is likely to be the result of lower-usage cohorts joining the ranks of 5G users; a similar phenomenon was widely observed with 4G.

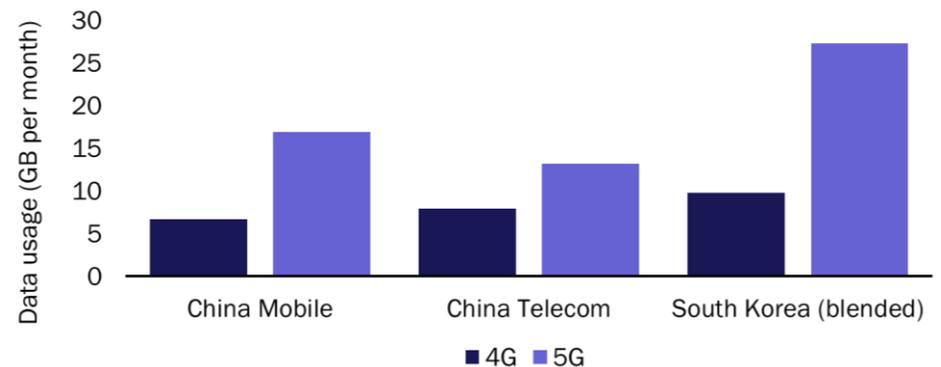
The ratio between average 5G usage and average 4G usage in South Korea has been around 2.6–2.8:1 since September 2019. China Mobile and China Telecom noted ratios of 2.5:1 and 1.7:1, respectively, in December 2019. The proportion of fixed–mobile convergence (FMC) customers in China Telecom’s mobile base is higher than that of China Mobile, and this probably explains the difference. As the body of 5G users grows and that of 4G users shrinks, the average 5G usage and the 5G:4G traffic ratio will eventually pick up.

Figure 5: Average data usage per subscriber by generation, and total year-on-year traffic growth, South Korea, January 2019–April 2020



Source: Analysys Mason

Figure 6: Average 4G and 5G data usage per subscriber by operator, China and South Korea, December 2019



Source: Analysys Mason

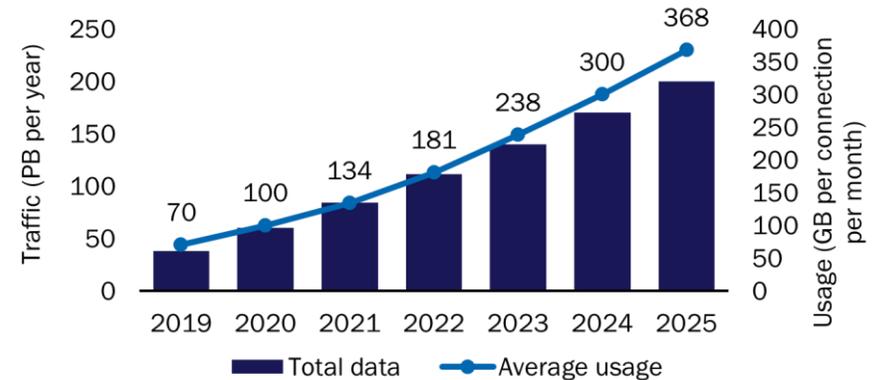
Worldwide trends: FWA, and in particular 5G FWA, will thrive only where fixed fibre is uncompetitive or absent and where mobile demand is weak

5G opens up the possibility of a new wave of FWA traffic, even though an uncapped broadband connection typically carries about 20–40 times more traffic than a mobile SIM. This imbalance means that the FWA broadband market share only needs to be small to significantly reduce cellular traffic.

Offering FWA on 4G networks is frequently a means to exploit spare and otherwise unusable capacity outside busy mobile areas. 5G creates sufficient additional capacity to make FWA viable in a greater range of areas. Very few of the 5G FWA offers on the market have any kind of formal data cap, although some have a fair-use policy (in common with some fixed broadband offers). Over time, the negative impact of high volumes of FWA traffic on the quality of experience for mobile users may be enough for operators to shift the balance of their broadband offers towards fixed. However, any failure to generate great interest in 5G mobile among consumers may actually help the case for FWA because it thrives where there is an overproduction of capacity.

The regional take-up of FWA is influenced by a range of drivers and constraints. The increasing availability of wholesale FTTP options in Europe and parts of Asia–Pacific will help to push MNOs towards using FTTP instead. There has been less enthusiasm for FTTP among operators in North America, and there has been renewed interest in FWA in the USA. We expect that this will help to drive 5G usage more quickly than elsewhere.

Figure 9: Annual FWA traffic and average FWA usage per connection, worldwide, 2019–2025



Source: Analysys Mason

Nearly all emerging markets are too spectrum-constrained for uncapped FWA to be viable, at least until the launch of 5G. In any case, the cost/revenue balance for FTTP in low-labour-cost economies is often better than that in developed economies. Low-income households and microbusinesses in these countries may see no additional benefit in, or simply may not be able to afford, FWA (or any other fixed broadband), and will continue to use mobile data as the sole means of accessing the internet. The dominant emerging use cases are for FWA to be a work-around for high-cost economies, and a filler for challenger MNOs with excess capacity. 5G FWA will not be a premium service, and the average usage will still be 25–40% lower than the average for broadband.



Executive summary

Worldwide trends

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Forecast methodology and assumptions

About the authors and Analysys Mason

About the authors



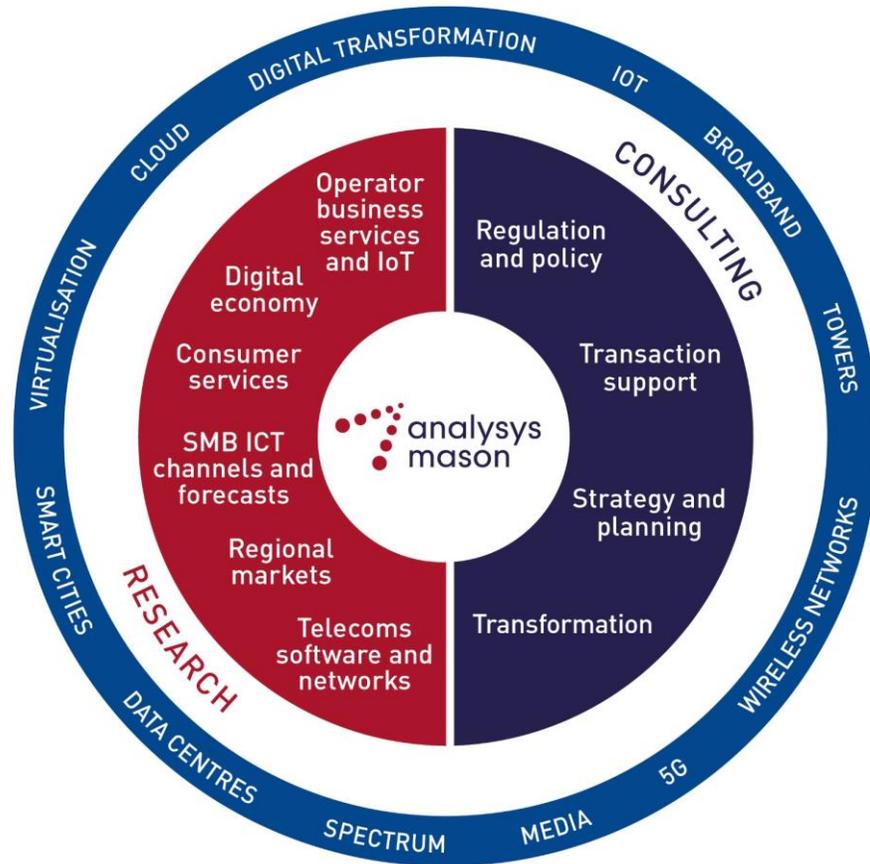
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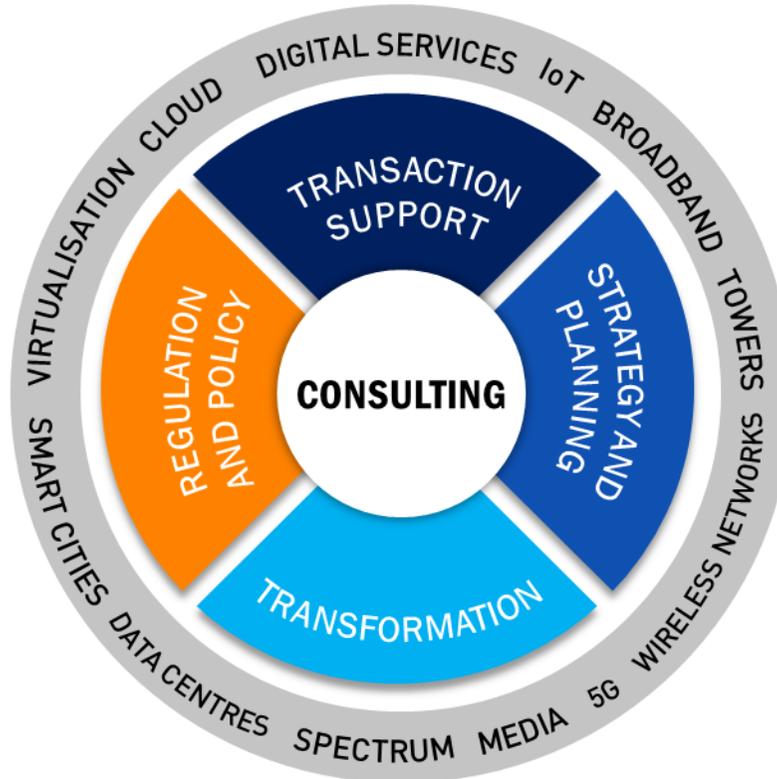
Regulation and policy

- Policy development and response
- Ex-ante market reviews, remedies, costing...
- Universal Service Obligation (USO)
- Scarce resources: radio spectrum management, auction support, numbering...
- Ex-post / abuse of dominance
- Postal sector



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- Transformation programmes
- Assurance
- Set-up
- Implementation
- Delivery



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- Technical due diligence
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- Joint venture structuring
- Mid-market financial sponsors

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PUBLISHED BY ANALYSYS MASON LIMITED IN JULY 2020

Bush House • North West Wing • Aldwych • London • WC2B 4PJ • UK

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