



Fixed network data traffic: worldwide trends and forecasts 2019–2025



Rupert Wood and Jakub Konieczny

About this report

This report analyses fixed data traffic trends worldwide, and draws out implications for operators.

It is based on several sources, including:

- Analysys Mason’s internal research, including broadband and next-generation access (NGA) forecasts, wireless traffic forecasts, *Connected Consumer Survey* and smartphone analytics research
- operator and regulator data
- ongoing engagement with stakeholders in the fixed telecoms sector.

WHO SHOULD READ THIS REPORT

- CTO and strategy teams in fixed network operators (FNOs)
 - This report will help them to understand how to tie their NGA conversion (and hence ARPU uplifts) to changes in usage demand, and in emerging markets, to understand how soon patterns of consumption could encourage fixed broadband (FBB) take-up.
- CTO and strategy teams in MNOs
 - The ability to substitute fixed (to gain greater share of wallet) is at the core of mobile revenue growth. MNOs urgently need a holistic fixed–mobile view of data consumption in order to plan for mobile and/or new fixed network investment.
- CTO and strategy teams in content/TV businesses
 - Rapid shifts to non-linear viewing present uncertainty for the continued use of RF (on unidirectional broadcast networks). A more-rational use of network options is possible, and spectrum used for RF could be of greater use to MNOs, for example.



Our forecasts are refined throughout the year. This report presents the results at the time of publication and will continue to give useful background information about key drivers. However, we recommend that you always use the Analysys Mason [DataHub](#) to view the latest data associated with this report.

• GEOGRAPHICAL COVERAGE

8 regions worldwide:

- **Central and Eastern Europe (CEE):** Poland, Romania, Russia, Turkey
- **Developed Asia–Pacific (DVAP):** Australia, Hong Kong, Japan, South Korea
- **Emerging Asia–Pacific (EMAP):** China, India, Indonesia, Malaysia
- **Latin America (LATAM):** Brazil
- **Middle East and North Africa (MENA):** Oman, Qatar, Saudi Arabia, UAE
- **North America (NA):** USA
- **Sub-Saharan Africa (SSA):** South Africa
- **Western Europe (WE):** Finland, France, Germany, Ireland, Italy, Sweden, Spain, UK

KEY METRICS

- Overall national and per broadband (BB) subscriber data, year total and year end
- Internet, managed IP, multicast data
- NGA and non-NGA split
- Median usage
- Fixed-mobile traffic ratios
- Asymmetry ratios
- Internet bandwidth per subscriber, average and busy hour
- Global split by device (TV, smartphone, PC/other)

Contents

5. Executive summary

6. Worldwide summary: subscriber growth and video substitution are the two main drivers, and 5G is unlikely to have a major impact

7. Worldwide trends

8. Mobile usage is not displacing fixed at a notable rate, except where there is a lack of fixed infrastructure

9. Fixed usage per connection does not strongly correlate to income

10. Large-screen video dominates the share of traffic, but there are limits to video growth and a healthy VR ecosystem has not emerged

11. The impact of 5G FWA will be greater than the impact of 5G mobile on fixed traffic usage, but neither will be dramatic

12. Understanding the balance of mobile and fixed data traffic is a vital part of getting future ISM and mobile spectrum allocation right

13. Traffic levels and actual end-user-path bandwidth speeds tell us very little about the real drivers of FTTP roll-out and take-up

14. In a 20-year timeframe, high-bandwidth services and data traffic volumes will become less important as inputs for network investment decisions

15. Forecast methodology

16. This report measures and forecasts IP data generated by fixed broadband connections

17. The report covers three broad classes of data traffic: internet, managed IP and multicast IPTV

18. The methodology focuses on shifts in video consumption and technologies

19. About the authors and Analysys Mason

20. About the authors

21. Analysys Mason's consulting and research are uniquely positioned

22. Research from Analysys Mason

23. Consulting from Analysys Mason

List of figures

Figure 1: Total fixed IP traffic split by type, worldwide, 2015–2025

Figure 2: Fixed broadband (wired only) subscribers, 2012–2025

Figure 3: Average fixed internet and mobile usage per capita, selected countries, 2019

Figure 4: Average data usage per FBB connection, and GDP per capita, selected countries, 2019

Figure 5: Share of IP traffic by device, Western Europe, 2014–2025

Figure 6: Global data traffic, by type, 2015–2025

Figure 7: UK, Austria and Finland data usage per capita, December 2019

Figure 8: Estimated split of mass-market data traffic by type of connection, Western Europe, 2019 levels

Figure 9: Traffic per MHz of data, mobile and Wi-Fi (4 and 5), Western Europe, 2019 levels

Figure 10: Data traffic per broadband connection, by technology, Ireland, 2015–3Q 2019

Figure 11: Scope of this forecast

Figure 12: Simplified diagram of three classes of fixed IP data traffic

Figure 13: Fixed data traffic forecast methodology

Worldwide summary: subscriber growth and video substitution are the two main drivers, and 5G is unlikely to have a major impact

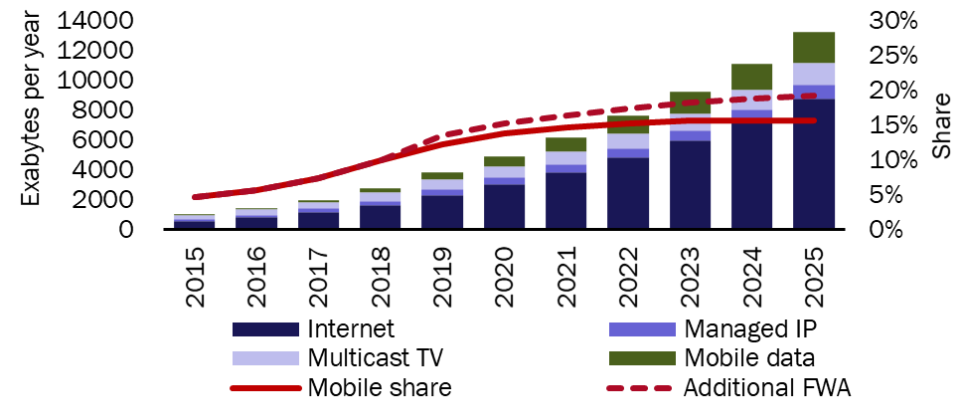
Subscriber growth will be strong in emerging economies, which will drive up the volume of data traffic, and broadcast to IP substitution will remain the largest driver of growth in usage. 5G will have limited impact on fixed trends.

The volume of fixed IP data traffic increased by 34% in 2019. It accounted for about 87% of all IP traffic worldwide. The number of fixed broadband subscriptions worldwide increased in 2019, but the growth rate slowed to 4% (compared with 8–10% for the previous 5 years). Subscription growth in emerging economies is strong, but will shift away from China. We remain cautious about FTTP take-up in the Indian subcontinent. However, if the level of adoption in this region reaches that in low-income countries (such as Vietnam), then earlier global levels of FBB growth may be possible.

TV screens are the largest driver of increased usage. There are two main reasons for this: substitution of broadcast by IP and the slow trend towards higher-definition TV. If fixed traffic is to grow at higher rates, other applications than flat-screen video will drive it.

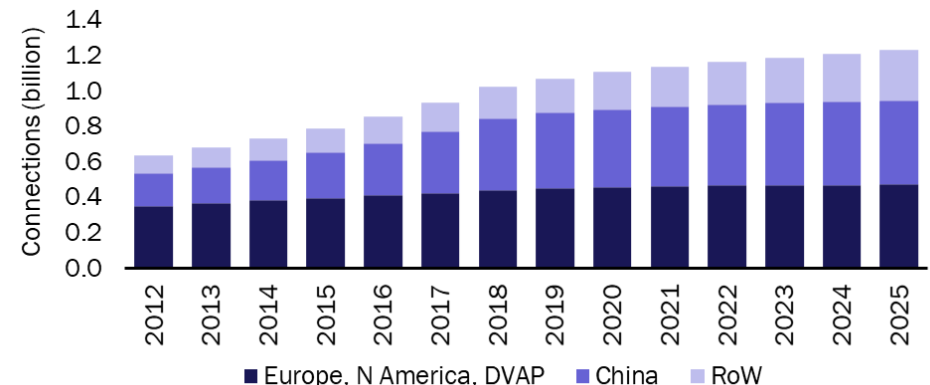
5G is not constrained significantly by capacity, and will affect fixed-access traffic in two ways. First, 5G fixed-wireless access (FWA) continues where 4G leaves off, and will only be a significant factor in locations where it can compete on price or speed. Second, 5G enables more unlimited smartphone plans, and it is therefore possible for the end-user to ignore home Wi-Fi. Indeed, it may be possible in some cases to give up FBB completely (if indoor coverage is sufficient and the household has few devices). However, we see few signs of this occurring yet.

Figure 1: Total fixed IP traffic split by type, worldwide, 2015–2025



Source: Analysys Mason

Figure 2: Fixed broadband (wired only) subscribers, 2012–2025



Source: Analysys Mason



Executive summary

Worldwide trends

Forecast methodology

About the authors and Analysys Mason

About the authors



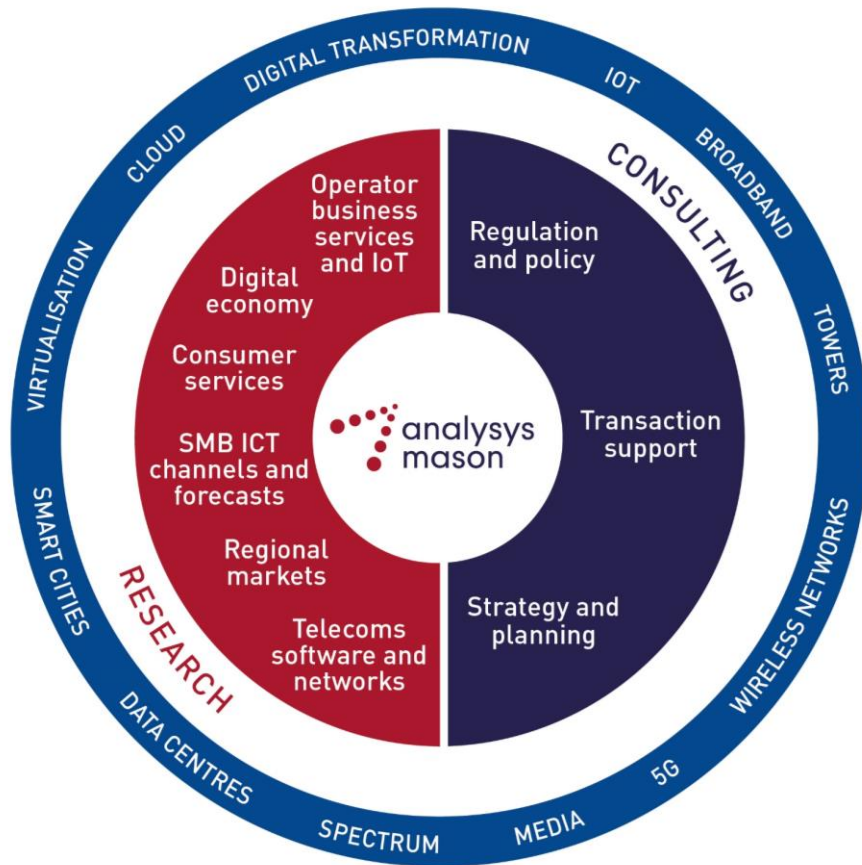
Rupert Wood (Research Director) is the lead analyst for our *Operator Investment Strategies*, *Network Traffic* and *Spectrum* research programmes. His research covers the following areas: the evolution of operators' investment priorities; operator business structures; business models for FTTx and convergence; fixed broadband technology; the economic impact of digital transformation; capex forecasting; and network traffic forecasting. He has extensive experience of advising senior management on strategic issues. Rupert has a PhD from the University of Cambridge, where he was a Lecturer before joining Analysys Mason.



Jakub Konieczny (Research Analyst) is a member of the regional markets research team in London, contributing mainly to the *Telecoms Market Matrix*, *European Country Reports* and *Global Telecoms Data* research programmes. Jakub holds a BEng in petroleum engineering from the University of Aberdeen.

Analysys Mason's consulting and research are uniquely positioned

Analysys Mason's consulting services and research portfolio



CONSULTING

We deliver tangible benefits to clients across the telecoms industry:

- communications and digital service providers, vendors, financial and strategic investors, private equity and infrastructure funds, governments, regulators, broadcasters, and service and content providers.

Our sector specialists understand the distinct local challenges facing clients, in addition to the wider effects of global forces.

We are future-focused and help clients understand the challenges and opportunities that new technology brings.

RESEARCH

Our dedicated team of analysts track and forecast the different services accessed by consumers and enterprises.

We offer detailed insight into the software, infrastructure and technology delivering those services.

Clients benefit from regular and timely intelligence, and direct access to analysts.

Research from Analysys Mason

Consumer services programmes

- Mobile Services
- Mobile Devices
- Fixed Broadband Services
- Convergence Strategies
- Video Strategies

Operator investment programmes

- Operator Investment Strategies
- Network Traffic
- Spectrum

Telecoms software and networks programmes

- Software Forecast and Strategy
- Telecoms Software Market Shares
- Network-focused**
- Next-Generation Wireless Networks
- Video and Identity Platforms
- Service Design and Orchestration
- Automated Assurance
- Network Automation and Orchestration
- Digital Infrastructure Strategies

Customer-focused

- Digital Experience
- Customer Engagement
- Monetisation Platforms
- AI and Analytics



Digital economy programmes

- Digital Economy Strategies
- Future Comms

Operator business services and IoT programmes

- Large Enterprise Voice and Data Connectivity
- Large Enterprise Emerging Service Opportunities
- SME Strategies
- IoT and M2M Services
- IoT Platforms and Technology

SMB ICT channels and forecasts programmes

- Managed Service Provider Strategies
- Cyber Security

Regional markets programmes

- Global Telecoms Data
- Americas
- Asia-Pacific
- Middle East and Africa
- European Core Forecasts
- European Telecoms Market Matrix
- European Country Reports

DataHub

- ~2500 forecast and 250+ historical metrics
- Regional results and worldwide totals
- Operator historical data

Consulting from Analysys Mason

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



analysismason.com/consulting

TRANSACTION SUPPORT

- Commercial due diligence
- Technical due diligence
- Mergers and acquisitions (M&As)
- Debt and initial public offerings (IPOs)
- Joint-venture structuring
- Mid-market financial sponsors

STRATEGY AND PLANNING

- Commercial expertise
- Technology optimisation
- New digital frontiers



PUBLISHED BY ANALYSYS MASON LIMITED IN **FEBRUARY 2020**

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

Tel: +44 (0)20 7395 9000 • Email: research@analysismason.com • www.analysismason.com/research • Registered in England and Wales No. 5177472

© Analysys Mason Limited 2020. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, mechanical, photocopying, recording or otherwise – without the prior written permission of the publisher.

Figures and projections contained in this report are based on publicly available information only and are produced by the Research Division of Analysys Mason Limited independently of any client-specific work within Analysys Mason Limited. The opinions expressed are those of the stated authors only.

Analysys Mason Limited recognises that many terms appearing in this report are proprietary; all such trademarks are acknowledged and every effort has been made to indicate them by the normal UK publishing practice of capitalisation. However, the presence of a term, in whatever form, does not affect its legal status as a trademark.

Analysys Mason Limited maintains that all reasonable care and skill have been used in the compilation of this publication. However, Analysys Mason Limited shall not be under any liability for loss or damage (including consequential loss) whatsoever or howsoever arising as a result of the use of this publication by the customer, his servants, agents or any third party.