



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Mobile Data Traffic Forecast For Ireland (2024-2028)

Summary of main findings

Information Notice

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Commission for Communications Regulation

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1. Introduction

- 1.1 The use of mobile networks continues to evolve and every year mobile networks are carrying increasing volumes of mobile data traffic.
- 1.2 To assist ComReg and other parties (i.e. the MNOs) in their planning for the provision of mobile services to users and building on the previous mobile data traffic forecast for the period 2018 to 2022¹, ComReg commissioned Frontier Economics (“Frontier”) to forecast the likely growth in mobile data traffic² in Ireland for the period 2024 to 2028.
- 1.3 Frontier’s Mobile Data Traffic Forecast has now been published as ComReg Document 24/58a. Frontier’s forecast supports ComReg’s work in informing its upcoming Radio Spectrum Management Operating Plan for the period 2025-2028, as well as completing a work plan action in ComReg’s Radio Spectrum Management Strategy Statement for the period 2022-2024 (ComReg Document 21/136) and for the Mobile Phone and Broadband Taskforce³.
- 1.4 A summary of the main findings in the Frontier’s Forecast is set out below.

¹ ComReg18/35, [Mobile Data Traffic Forecast in Ireland](#), published 2018

² ComReg draft data dictionary Mobile available for download [here](#).

³ <https://www.gov.ie/en/publication/db7f83-mobile-phone-and-broadband-taskforce/>

MOBILE DATA TRAFFIC FORECASTS

2023 - 2028

Device growth 2023 to 2028



0.7%

annual growth in population



2%

annual growth in mobile handset connections



4%

annual growth in MBB connections



15%

annual growth in M2M connections*

Traffic growth per device to 2028



2023

200GB

traffic per mobile handset per year

2028

440GB

traffic per mobile handset per year (+120%)



980GB

traffic per MBB device per year

1,050GB

traffic per MBB device per year (+7%)



0.7GB

traffic per M2M connection per year

1.4GB

traffic per M2M connection per year (+100%)

Total traffic growth to 2028

16.5%

Average annual traffic growth 2023-2028



3,200PB

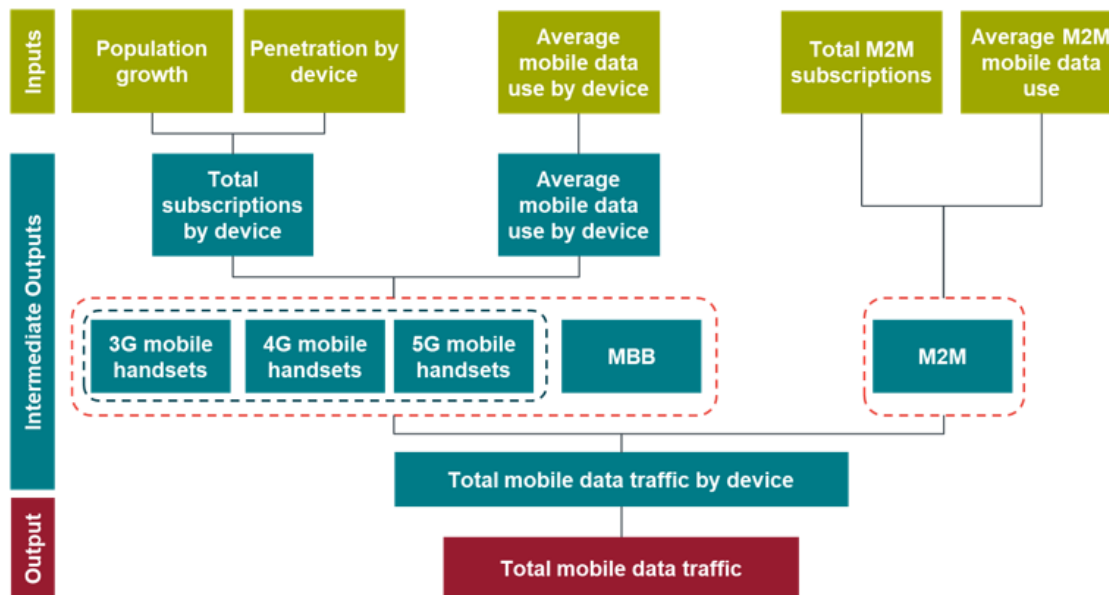
Forecast total mobile data traffic 2028

* Excluding smart metering

2. Frontier’s Forecast

Frontier's modelling structure

1.5 An overview of Frontier’s modelling structure is set out in Figure 1 below.



Source: Frontier Economics

Note: 2G mobile handset traffic has not been included as a separate category. This is not expected to affect results as number of 2G handsets (i.e. handsets that do not have 3G, 4G or 5G capabilities) is small; and the data traffic per 2G device is very low.

Figure 1: Overview of Frontier’s modelling structure

1.6 Frontier’s modelling disaggregates current usage by device type and then projects forward on the same basis. Based on recent usage trends in Ireland, the model forecasts device penetration and data usage per device, which together form the total traffic generated by devices. This is an approach similar to that used in the previous mobile data traffic forecast for the period 2018-2022.

1.7 The projections reflect total traffic carried on mobile networks (both download and upload⁴). Forecasts are made for each category of device (Mobile handsets, Mobile Broadband (“MBB”) devices and Machine-to-Machine (“M2M”) devices), with the sum of these being the total mobile data traffic projection.

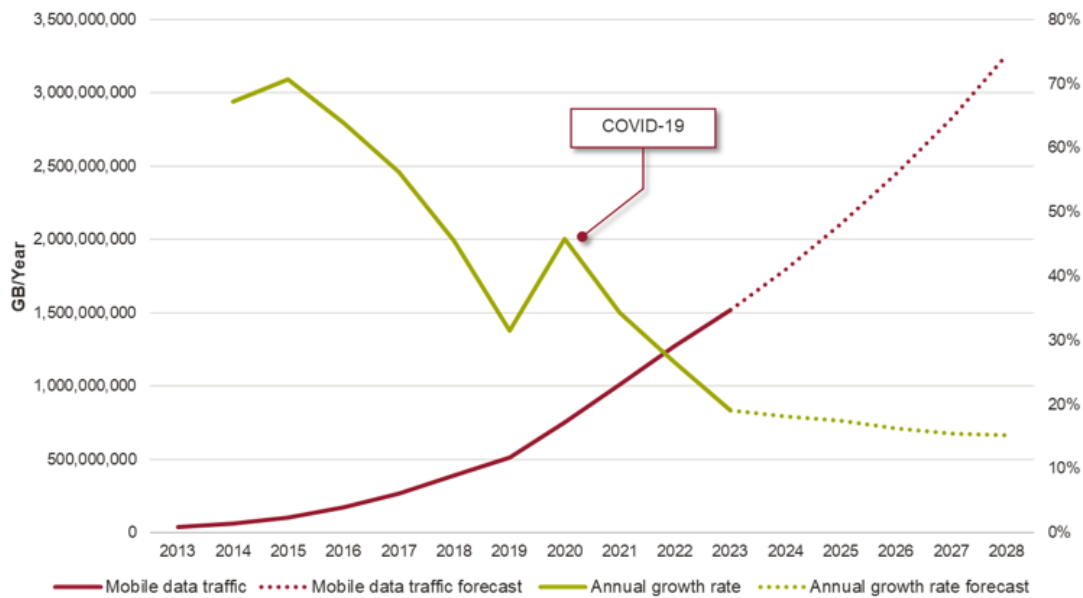
Central mobile data traffic forecast (2024-2028)

1.8 Taking both demand and supply side factors into consideration (see Chapter 3 of Document

⁴ ComReg draft data dictionary Mobile available for download [here](#).

24/58a) and applying its modelling approach, Frontier forecasts that by 2028 total mobile data traffic is expected to have grown 2.2 times when compared with 2023, that is from 1,500 petabytes (PB)⁵ per year in 2023 to 3,200 PB in 2028.

1.9 This represents an average growth rate of 16.5% per year during this period, although the rate of growth has notably reduced when compared to earlier years:



Source: Frontier Economics

Note: Note that mobile data traffic is on the left axis and growth rate is on the right axis

Figure 2: Central forecast of mobile data traffic volumes and annual growth rate

1.10 Frontier’s forecast is broadly consistent with that of other available forecasts, even if a direct comparison is not practical.⁶

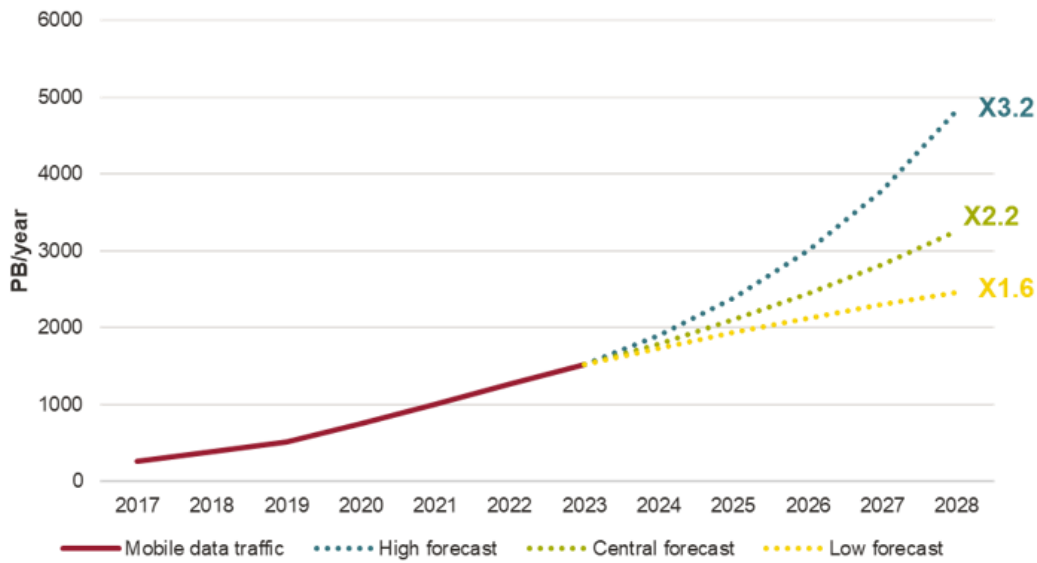
Low and High forecasts of mobile data traffic (2024-2028)

1.11 Given the uncertainty surrounding future mobile data use, Frontier also provided low and high forecasts by varying certain of its assumptions on penetration and mobile data use per device.

1.12 These alternative forecasts range from 4,800 PB of mobile traffic data in 2028 in the high scenario (x3.2 growth), down to 2,500 PB of data in the low scenario (x1.6 growth).

⁵ 1 petabyte = 1,000,000 gigabytes

⁶ Other forecasts address different time periods, and the mobile data traffic characteristics of each country will naturally be somewhat different. For example, Ireland’s mobile data traffic growth curve is at a different stage to that of the UK. Ireland’s mobile data consumption per capita for 2023 is almost double that of the UK (308 GB’s compared to 164 GBs) and Ireland’s actual mobile data traffic growth of 22% for the period 2021 to 2023 is considerably lower than Ofcom’s forecast of 36% for the UK for the 2021-2025 period.

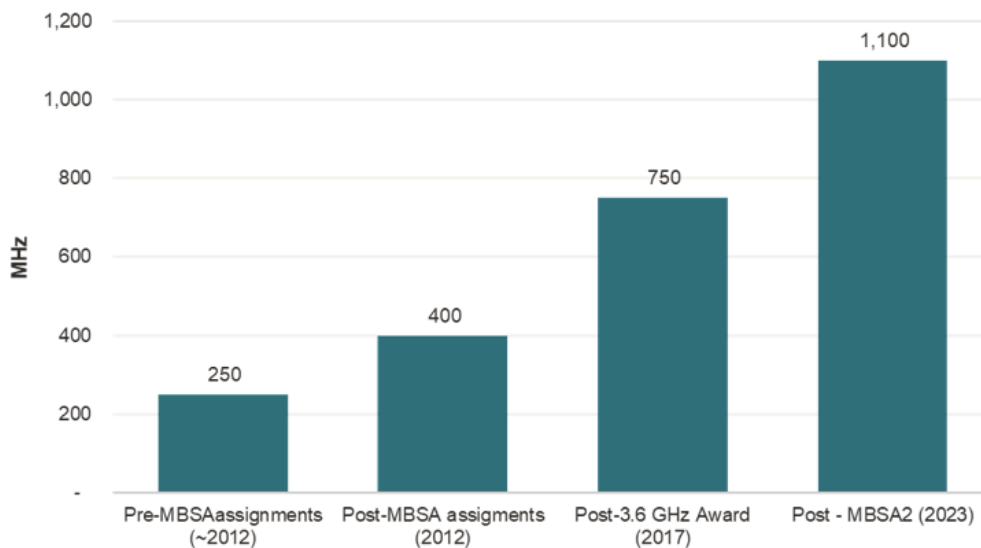


Source: Frontier Economics

Figure 3: Low, Central and High forecast of total mobile data traffic (GB/year)

Spectrum assigned for mobile services

1.13 Radio spectrum is an essential input into the provision of mobile connectivity services and ComReg has been especially proactive in its assignment having increased its availability fourfold or more since 2012:



Source: ComReg Doc 21/136, ComReg Doc 22/105

Notes: post 2023 spectrum relates to the time slot 2 period of award (from 2027). The total spectrum available includes spectrum assigned to Imagine (55 MHz in MBSA2 and 60 MHz (rural) in 3.6 GHz band); and Dense Air (25 MHz (Rural) and 60 MHz (Urban) in 3.6 GHz band)

Figure 4: Total harmonised radio spectrum made available for mobile use

- 1.14 In 2017, ComReg assigned 350 MHz of spectrum in the 3.6 GHz band, an increase of 87% compared to the amount of spectrum previously assigned.
- 1.15 In 2023 465 MHz of spectrum was assigned in the second Multi-Band Spectrum Award (MBSA2 award), of which 60 MHz was in the sub-1 GHz range and 405 MHz was in the above-1 GHz range. This increased the amount of assigned spectrum by 350 MHz or 46%.
- 1.16 Together, the above spectrum assignments represent a 175% increase over the last seven years, and the volume of spectrum has increased in both the sub-1 GHz bands (ideal for wide area coverage and in-building coverage) and the above-1 GHz bands (ideal for providing capacity in areas with high demand).
- 1.17 In relation to this increased spectrum assignment, Frontier observes that
- *Both availability and deployment of spectrum has increased in recent years. The increased availability and use of mobile spectrum has enabled mobile operators to upgrade and improve the capacity and performance of their networks;*
 - *Many spectrum bands, such as the 2.3 GHz, 2.6 GHz and 3.6 GHz bands, are currently under-utilised when compared to the more-established bands of 1800 MHz and 2.1 GHz; and*
 - *This provides scope for further network capacity increases as MNOs continue their network rollout.*

Next steps

- 1.18 ComReg will continue to monitor market developments and will update its forecasts to take account of any further developments. Frontier's forecast is one of the many factors which will inform ComReg's radio spectrum work plan considerations for the coming period, noting that in Q3 2024 ComReg plans to consult on its proposed Spectrum Management Operating Plan for the period 2025 – 2028.