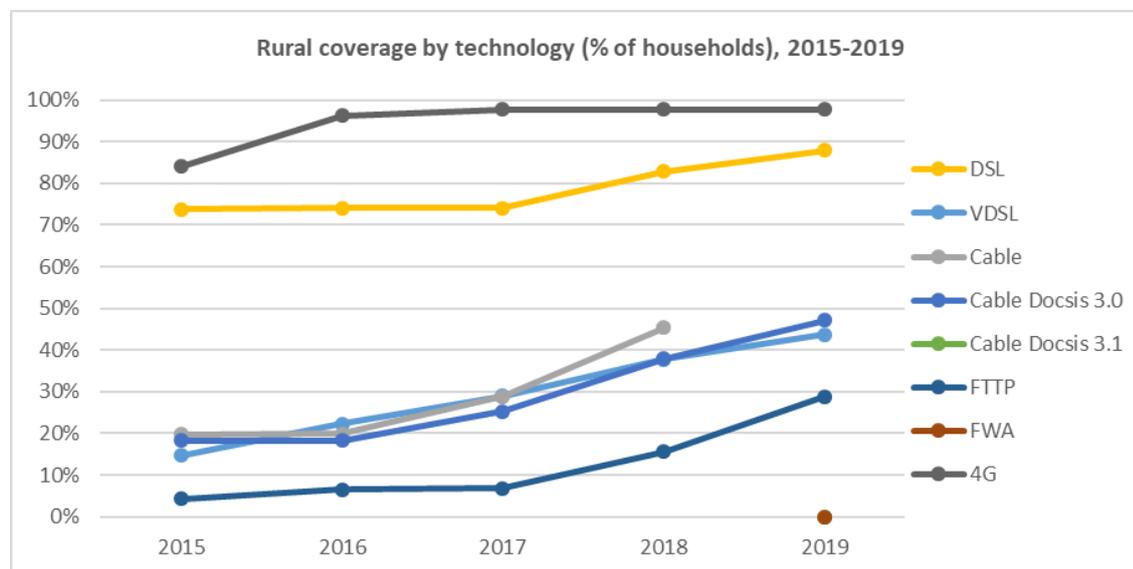
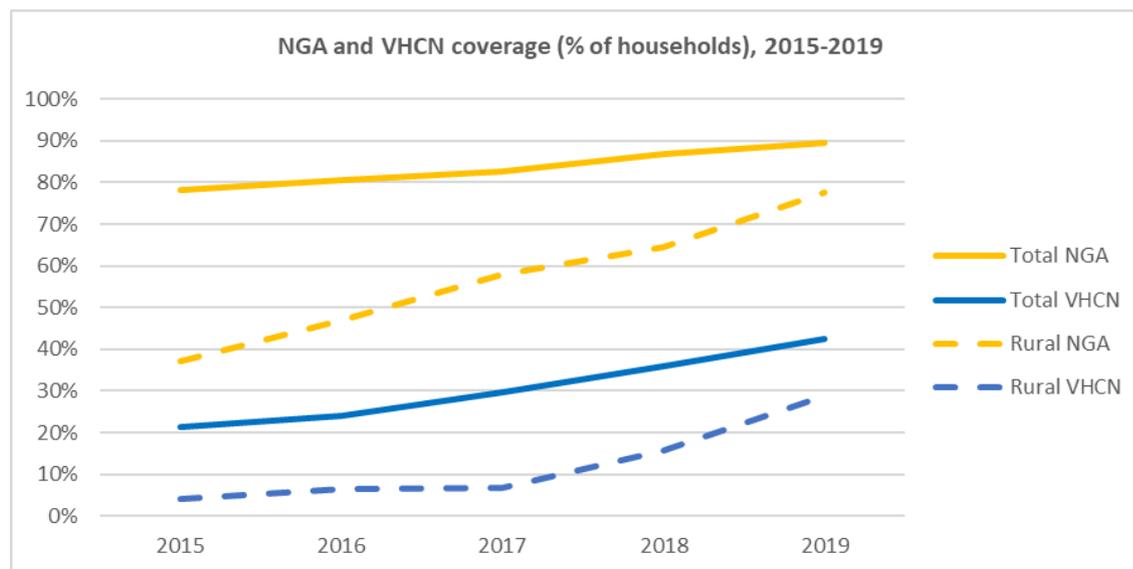


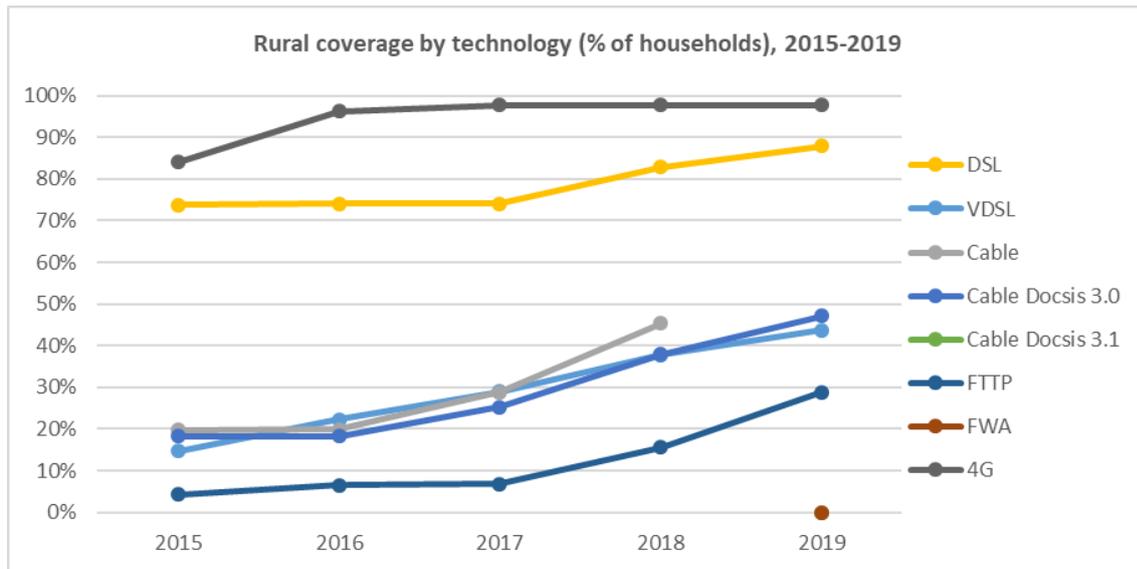
Hungary

In 2019, the coverage of next generation access (NGA) grew to 90%, above the EU average of 86%. Rural NGA coverage increased from 65% to 78%, significantly above the EU average of 60%. Very high capacity network (VHCN) coverage continued to grow from 36% to 43%, close to the EU average of 44% (Hungary ranks 19th in the EU in this respect). The urban-rural digital divide is illustrated by figures for VHCN coverage, despite a significant increase in rural areas from 13% to 29% (above the EU average of 20%). Both urban and rural VHCN coverage corresponds to the fibre to the premises (FTTP) footprint of 43% and 29% respectively.

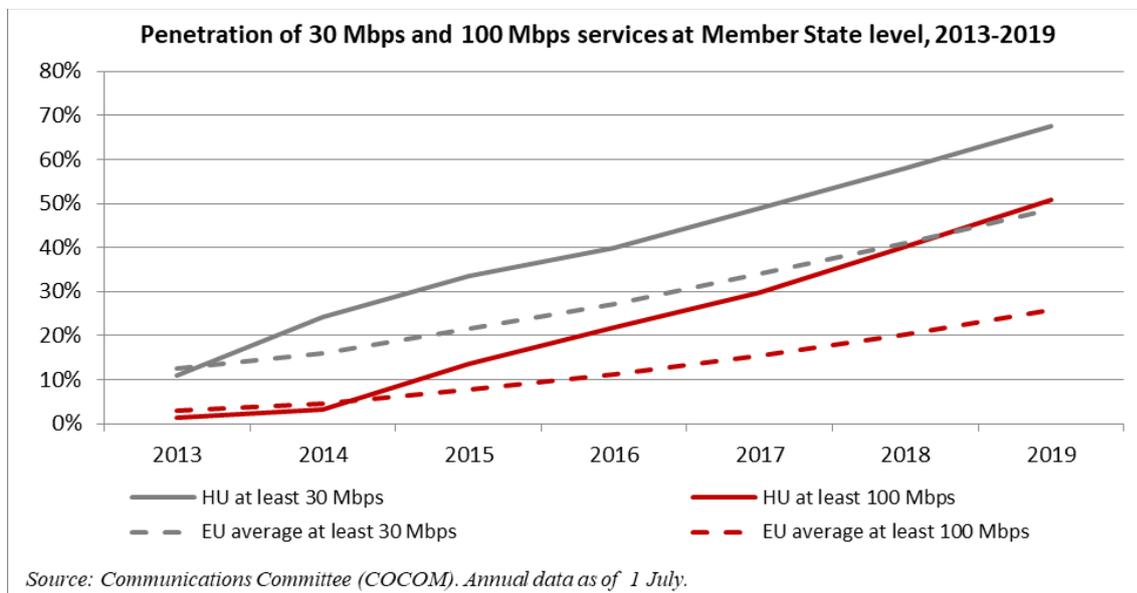


Source: IHS and Point Topic, *Broadband coverage in Europe studies*

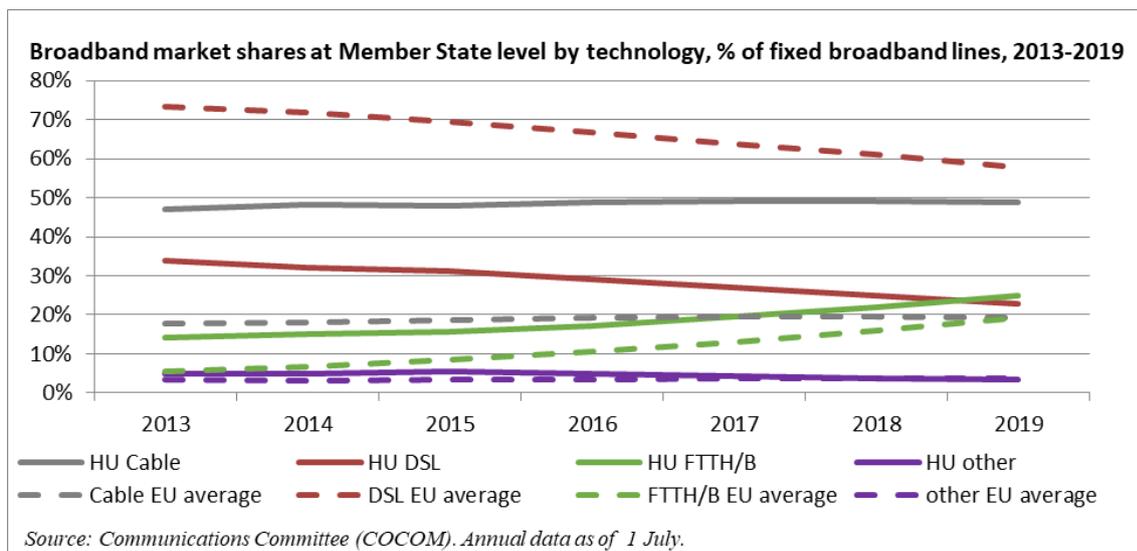
In Hungary, the overall fixed broadband take-up improved to 82% inching above the EU average of 78%. Meanwhile, the take-up of at least 30 Mbps broadband increased significantly from 58% to 68% (better than the EU average of 49%). More importantly, the take-up of at least 100 Mbps broadband grew from 40% to 51% in the last year, almost double of the EU average of 26%. This trend may be explained by the increase in the share of fibre-to-the-home/building (FTTH/B) technology of fixed broadband lines from 22% to 25% and the share of cable remaining stable at around 49% over recent years. Meanwhile the share of DSL decreased from 25% to 23%.



Source IHS and Point Topic, Broadband coverage in Europe studies

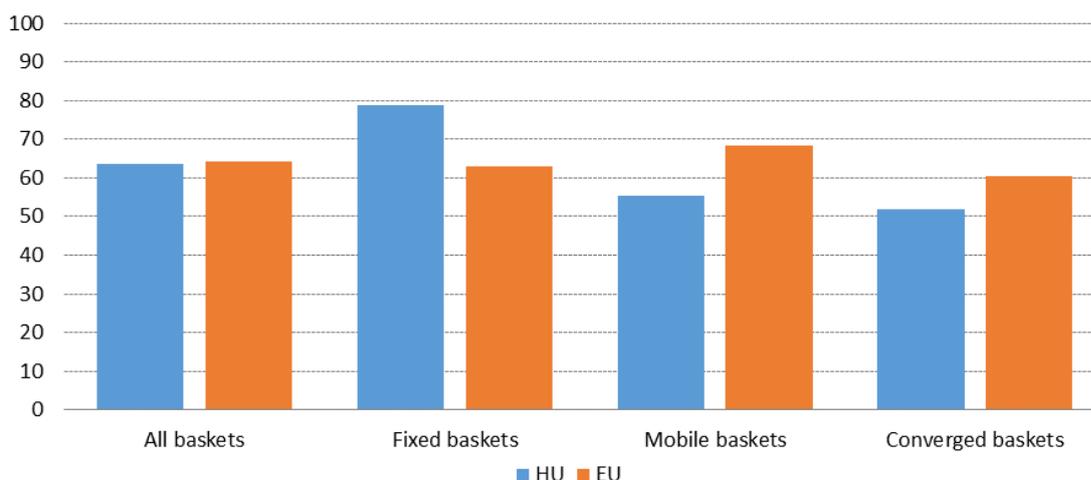


Source: Communications Committee (COCOM). Annual data as of 1 July.



Source: Communications Committee (COCOM). Annual data as of 1 July.

Broadband price index (Score 0-100, 100 being the best), 2019



Source: European Commission based on Empirica (Retail broadband price studies)

Hungary ranks the 16th in the EU in terms of broadband prices when analysing all product baskets (fixed, mobile, converged). Hungary ranks eighth in terms of fixed broadband prices. However, converged products (19th place) and mobile broadband prices (23rd place) are still higher than the EU average.

1. Progress towards a Gigabit Society¹

Hungary inched above the EU average for connectivity, and ranks 13th after a sustained relative improvement over the last few years. While fixed broadband coverage has remained stable at around 94% of households, fast broadband coverage has risen to 87%. In addition, Hungary continues to score well on ultrafast connectivity, mainly thanks to its widespread cable networks, which cover 82% of households (60% in the EU).

The development of digital infrastructure is one of the pillars of Hungary's 2014-2020 national information strategy. This strategy was updated at the end of 2015 with the adoption of the digital success programme and the launch of the superfast internet programme (SIP). A new gigabit Hungary strategy was drafted in 2019 and the Government plans to adopt it in 2020, which would, on the one hand, reflect the Gigabit Society targets for 2025 and on the other, establish longer-term targets for 2030 in Hungary.

The vast majority of projects under the SIP deployed FTTH technology, enabling speeds envisaged in the Gigabit Society targets. The project intends to cover all Hungarian households – broadband coverage for almost 410,000 households is financed from EU Structural Funds – with networks supplying at least 30 Mbps broadband internet service by 2023. For areas that are not economically viable, a €250 million State aid scheme has been developed to ensure broadband roll-out. The project deployment is reflected in the increase of rural FTTP coverage from 4% in 2015 to 7% in 2017, reaching 16% in 2018 and 29% in 2019. By the end of 2019, 213,064 households were covered with 30 Mbps broadband.

The SIP gives preference to future-proof FTTH solutions and most of the participating undertakings are deploying this technology (86% of the coverage area). The programme started in 2016 with a mapping exercise to identify areas in which telecom operators are expected to make the full

¹ It is noted that statements regarding planned or potential State aid measures record intentions declared by Member States and do not pre-judge or pre-empt the assessment of such measures by the Commission under the relevant state aid rules. The DESI report is not meant to provide any assessment of the compliance of such measures with state aid rules and procedures.

investment on their own. The programme is co-funded by the European Structural Funds and by the Hungarian State, except for Budapest and its suburban area, for which only national resources have been used. In 2019, two new public consultations were launched to identify unserved areas: there was a consultation with operators from 29 October to 15 November and a consultation with end-users from 16 October to 15 November.

In 2019, the 5G strategy produced on the basis of proposals from the 5G Coalition (5GC) was not assumed by the Hungarian Government. The 5GC was established under the digital success programme with the aim of making Hungary a major European centre of 5G developments and leader in the region in the testing of 5G-based applications.

In October 2019, Vodafone launched 5G commercial services in Budapest. In mid-April 2020, Magyar Telekom launched 5G services in parts of Budapest and Zalaegerszeg. Telenor undertook 5G mobile tests in a number of Hungarian cities.

Operators complain about the conditions set by electricity companies to access their infrastructure for the purpose of construction of telecommunication networks. The time and cost implications of these processes constitute a significant difficulty in the development of both the fixed line and mobile networks. This situation is also causing delays for the beneficiaries of the SIP projects in terms of meeting their contractual deadlines. While the transposition of the Broadband Cost Reduction Directive gave operators the legal basis to bring disputes with utility companies to the national regulatory authority, the NMHH, there was no such procedure initiated so far. Actors in the market consider that operators do not want to risk long-term relationships with the utility companies by requesting dispute resolution for local access request to physical infrastructure.

2. Market developments

At the end of 2018, there were 390 registered fixed internet service providers, which had dropped to 373 by 31 December 2019. Over the same period, the number of fixed telephony operators dropped from 164 to 158.

According to data from the regulator, in Q4 2019, in the market for fixed broadband services based on the number of access points, the market shares were 37.5% for Magyar Telekom, 23.6% for the DIGI group and 21.6% for UPC while small operators accounted for 17.3%. In the market for mobile broadband services, market shares based on the number of SIM cards with mobile broadband traffic were 42.61% for Magyar Telekom, 27.63% for Vodafone and 27.5 % for Telenor while other operators represented 1.3 % of the market.

In the market for mobile voice services, market shares based on the number of SIM cards with voice traffic are as follows as of Q4, 2019 (against Q4 2018 – given in brackets): Magyar Telekom 44.8% (44.9%), Telenor 27.2% (28.0%) and Vodafone 26.7% (26.4%), and other operators 1.3% (0.7%).

Digi, one of the largest cable service providers, and provider of audio-visual content through the previous acquisition of ITV, bought Invitel, the second largest fixed incumbent operator. The merger was cleared by the Hungarian competition authority, GVH, in May 2018. In November 2018, the GVH imposed a €280,000 (90 million HUF) fine on Digi for misleading the authority by remaining silent on its wrong calculation of the number of overlapping areas, which was reduced to €45 million by Metropolitan Tribunal Court. GVH also revoked its clearance decision granting DIGI's request for non-separation and allowing it to continue the already initiated steps taken in implementing the merger. The proceedings to reassess the merger continued throughout 2019 and were concluded on 18 March 2020 through the GVH decision which approved the acquisition. During the proceedings, GVH approved the remedy package proposed by Digi. One of the main items of this package is the sale by Invitel to a third party of its operations in 14 Hungarian settlements that overlapped with Digi Hungary's own network there. The sale became effective on 9 January 2020. In response to the

competition concerns raised by GVH in connection with 67 settlements where Invitel has overlapping services with i-TV, Digi HU proposed to ensure that i-TV's rental agreements with the relevant local network operators will not be terminated until December 31, 2023 (but will be discontinued from 1 January 2024)².

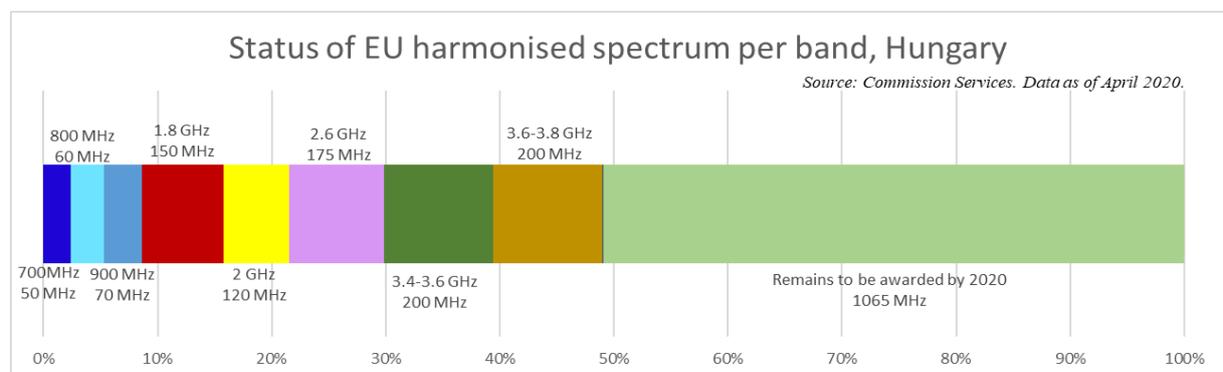
DIGI has started its operation as a mobile network operator (MNO) in the second half of May 2019 raising the number of network based mobile operators to four in the Hungarian market. DIGI had 99,000 mobile customers in 2019³.

2019 is the first full year in which Telenor was under the full control of the Czech PPF Group after the acquisition was completed in July 2018 in a transaction that included Telenor's wholly owned mobile operations in Hungary, Bulgaria, Montenegro and Serbia. Among the major MNOs, Telenor is the only provider that does not have a fixed access network. On 31 October 2019, PPF Group and Antenna Hungária announced that PPF had sold a 25% stake in its Telenor Hungarian companies (Telenor Hungary and Telenor Real Estate) to the state controlled Antenna Hungária. Antenna Hungária's main field of activity is the national terrestrial television and radio broadcasting services, and wireless business telecommunication services.

On 18 July 2019, the European Commission cleared Vodafone's acquisition of Liberty Global's cable business in Czechia, Germany, Hungary and Romania. In particular, the Commission did not find competition concerns in Hungary. UPC's fixed network footprint ensures that Vodafone Hungary becomes a strong challenger offering bundled fixed and mobile services. This could alter the competition dynamics in Hungary for fixed-mobile converged bundled offers.

3. Regulatory developments

3.1. Spectrum assignment



In Hungary, 49% of the 2090 MHz spectrum harmonised at EU level for wireless broadband has been assigned. A multi-band award process was initially planned to take place in October 2019. The targeted bands include two out of the three 5G pioneer bands, namely the 700 MHz and 3400-3800 MHz bands, and remaining spectrum in the 2100 MHz and 2600 GHz bands. The documentation of the auction procedure was published on 18 July 2019. The NMHH registered three participants, refusing DIGI's participation on account of being fined by the GVH. DIGI contested the NMHH's decision and asked the Court of appeal for an injunction to prevent the auction from proceeding. On 10 January 2020, the Court rejected DIGI's demand for injunction and stated that NMHH may resume the tendering procedure independently from the ongoing case.

² <https://www.gvh.hu/sajtoszoba/sajtokozlomenyek/2020-as-sajtokozlomenyek/a-gvh-lezarta-a-digi-es-az-intel-fuziojanak-ismetelt-vizsgalatat>

³ Preliminary financial result for year ended December 31 2019.

The multi-band award process for the 700 MHz, 3400-3800 MHz bands and remaining spectrum in the 2100 MHz and 2600 MHz bands took place on 26 March 2020. Magyar Telekom, Telenor and Vodafone gained licences for a total amount of 128.5 billion HUF (approximately €360 million).

The 700 MHz band will be available nationwide for wireless broadband services after 6 September 2020, when the administrative contract between Antenna Hungária Zrt. and NMHH on operating five digital television broadcasting multiplexes will expire. The administrative contract was amended in order to gradually switch off broadcasting in the 700 MHz band before 6 September 2020.

In 2019, the NMHH and Antenna Hungária signed the official agreement on operating licences for national terrestrial digital television broadcasting networks as of 18 September 2020. The NMHH started the negotiation with the local broadcasters to reach an agreement for the transition and on switching off broadcasting in the 700 MHz band.

The deployment of public wi-fi networks was boosted by the SIP programme which mandated that a free wi-fi hot spot was to be installed every settlement covered by the project. Some 2,350 settlements in rural and underdeveloped areas were covered under this programme. The rollout and operation costs are borne by the beneficiaries of the supported broadband projects as part of a binding commitment.

Some 154 Hungarian municipalities won vouchers through the WiFi4EU initiative. Every wi-fi hot spot will operate for 3 years.

3.2. Regulated access

In 2019, NMHH did not notify any economic regulation decision to the Commission.

On 18 February 2020, NMHH notified to the European Commission and BEREC the analysis of market 18 under the 2003 Commission Recommendation⁴ on broadcasting transmission services. In March 2020, the NMHH adopted its decision to further regulate the market, designating Antenna Hungária as operator with significant market power (SMP).

In 2019, the decision on the remedies concerning the market for wholesale high-quality access provided at a fixed location (market 4 of the 2014 Recommendation on relevant markets⁵) was adopted. The reference unbundling offers containing terms and conditions of the regulated wholesale access products (on markets 3a and 3b of the 2014 Recommendation on relevant markets) were approved in the first half of 2019. The national consultation of Magyar Telekom's reference offer containing virtual unbundled local access (VULA) was concluded in 2019. The reference offer was approved in November 2019. The VULA service - provided by Magyar Telekom – may be used up from 1 June 2020.

NMHH addressed three requests for dispute resolution related to access obligations in 2019. These concerned VULA access, wholesale call termination provided on individual public telephone networks and the obligations incumbent on the legal successor of a designated SMP operator. In the first two cases, the NMHH deemed the behaviour of the SMP operators to be unlawful. In the third case, the NMHH confirmed that the legal successor is bound by its legal predecessor's SMP obligations. None of these decisions were appealed in court.

4. End-user issues

a. Complaints

In the first two quarters of 2019, the NMHH received 120 complaints from end-users compared to 139 in the previous year. Most of the complaints related to contractual terms (41%) in particular insufficient or misleading information received after the contract was concluded. 21% of the

⁴ Commission Recommendation 2003/311/EC.

⁵ Commission Recommendation 2014/710/EU.

complaints concerned the quality of service while 19% concerned billing. A smaller number of complaints concerned number portability (3%) and value added services (2%).

b. Open Internet

In the reporting period, Magyar Telekom's offer of an optional mobile IAS add-on package called "Korlátlan Net" (Unlimited Internet) was investigated. The terms and conditions only permitted the offer to be availed of with a mobile phone, while other types of terminal equipment were not allowed. In addition, Magyar Telekom slowed down peer-to-peer (P2P) and virtual private network (VPN) traffic. The NMHH determined that these terms were in violation of the open internet regulation and ordered the provider to cease these practices. The operator undertook to lift the limitation on terminal equipment as well as the slowing down of VPN traffic. However, it appealed the decision in connection with the handling of P2P traffic, as it believes the slowing down of such traffic is permitted under the open internet rules for protecting the network and other subscribers. The appeals process is ongoing. Two joint cases C-807/18 and C-39/19 involving Telenor are awaiting preliminary rulings before the European Court of Justice following the request from the Fővárosi Törvényszék (Budapest High Court). In the national court, action was brought by Telenor against the NMHH decision which (i) found that the complementary service offered by Telenor, available for mobile phone subscriptions and which allows limited and unlimited data traffic for certain music streaming platforms (known as the MyMusic reduced tariff), infringed Article 3(3) of Regulation 2015/2120 and (ii) ordered Telenor to eliminate the differences between certain forms of internet traffic.

c. Emergency communications – 112

Hungary is part of the HELP 112 II project financed by the Commission, which aims to deploy the advanced mobile location (AML), the handset-derived location service, by July 2020.

d. Universal service

In 2019, the designation of the previous three universal service providers to provide access to publicly available telephone networks at a fixed location, and to operate public pay phones and directory information, was renewed. These operators are the incumbents: Magyar Telekom Nyrt., Invitel Távközlési Zrt., and UPC Magyarország Kft. Since 1 January 2020, TARR Kft. has been designated as a universal service provider for these services in the areas where it has significant market power. Invitel Távközlési Zrt. has been designated as the universal service provider for operating the national telephone enquiry service.

5. Conclusion

Significant progress has been made in fixed broadband coverage and take-up through the SIP. However, Hungary lags behind its European peers in mobile broadband take-up while prices for mobile phone users are persistently among the highest in Europe. While the 5G multiband auction took place in March 2020, the fourth mobile operator was prevented from taking part in the auction and contested the decision in Court.