1. Progress towards a gigabit society

All major operators actively invest in ultra-high speed networks. In 2018, the Cypriot telecoms group CYTA started to deploy a G-PON fiber-to-the-home (FTTH) network as part of a ten-year €100 million investment plan, meant to cover mainly urban areas. In total 180,000 households will be connected to this network, of which 100,000 will be connected in the first 4 years. In rural areas, high-speed internet access will be supported through the use of vectoring and bonding techniques. Cablenet, another Cypriot telecoms group, already passes 53% of the premises in Cyprus with a DOCSIS 3.0 network. Cablenet currently deploys an FTTH access network in a rural area near Nicosia (targeting 5,000 premises) and plans to deploy FTTH access networks in Paphos (2020) and Paralimni (2021). Two other telecoms groups, MTN and Primetel, have also announced they will start to deploy fibre infrastructure in 2019.

Given these plans, national authorities are optimistic that Cyprus can meet the 2020 target for ubiquitous 30 Mbps coverage. The main difficulty in achieving this target is the deployment of fast and ultra-fast broadband networks (fixed and mobile) in remote villages and rural areas. In these areas, low population density hampers viability and makes the rollout of commercial networks a business risk.

The take-up of high-speed broadband services is still poor, which causes continuous concerns for market participants. The reasons for low take-up include pricing, lack of compelling content and low digital literacy.

To address these issues, the national broadband plan (NBP) contains demand-side measures, aiming to increase digital awareness and encourage broadband take-up. These measures include awareness campaigns, training programmes, the digitalisation of the government, and the provision of (limited) free wifi access in public buildings and remote villages. However, the implementation of several of
these measures continues to lag behind schedule, mainly due to court actions, which are customary in most public procurement procedures.

To address pricing issues, Cyprus announced in January 2019 a pilot voucher scheme, which will subsidize new subscriptions (or upgrades) for speeds of 100 Mbps and above for a duration of 12 months. The intention is to cover approximately 1/3 of the annual costs, which amounts to a subsidy of €360 the maximum per subscription per year. The total budget is estimated to approximately €800,000, coming entirely from national funds.

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<th>CY total fixed broadband coverage</th>
<th>CY total NGA coverage</th>
<th>CY total ultrafast coverage</th>
<th>CY rural fixed broadband coverage</th>
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Cyprus has recently updated its NBP, to align it with the targets of the European gigabit society¹ and the 5G action plan². It also intends to draft a new broadband plan by end 2020. This new broadband plan will include detailed actions in accordance with the guidelines of the Commission. One of the actions of the new NBP will be the deployment of very-high-speed infrastructure in areas where this is not viable with private investment alone. The target is to reach 100% coverage with 100 Mbps.

Cyprus intends to include 5G in the new NBP. There is growing market interest in 5G, and all three mobile operators have asked for pilot rights to use the 3.5 GHz band. These rights have been granted, and will last until the launch of the auction for 5G spectrum, currently anticipated to take place in Q3 2019.

Cyprus also intends to auction 5G spectrum in the second half of 2019. The auction will include the 3.5 GHz band, the 26 GHz band and, if all relevant issues are resolved and the migration process is complete, the 700 MHz band. The authorities do not anticipate any problems for the licensing of the 3.5 and 26 GHz bands, as there are no pending rights of use. They have consulted with the market on the 1.5 GHz band but there was no interest at all, mainly because this is a download-only band.

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Connectivity for a Competitive Digital Single Market — Towards a European Gigabit Society (COM (2016) 587 final)
² Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions — 5G for Europe: An action plan (COM (2016) 588 final)
Preparations for the transposition of the European Electronic Communications Code (EECC) into Cypriot law are under way. The Office for the Commissioner of Electronic Communications and Postal Regulation (OCECPR) requires an internal study of the Code’s provisions to be completed by March 2019, followed by consultations with stakeholders until May 2019. The government’s current intention is to draft a new law, which will transpose the EECC into national legislation and will replace the Electronic Communications Law 112(1)/2004. The final draft of the new law is planned for February 2020, with a view to have it ratified by Parliament by October 2020. The Department of Electronic Communications is also preparing a new Law, concerning radio frequency management issues, which will transpose parts of the EECC into national legislation and will replace the Radiocommunications Law of 2002-2016. The law is scheduled to be ratified by Parliament by October 2020.

2. Market developments

This has been a year of structural change in the Cypriot market. The incumbent operator CYTA sold its subsidiary in Greece (CYTA Hellas) to Vodafone, thus restricting its business activities in Cyprus. At the same time, Monaco Telecoms acquired MTN, the second biggest mobile operator in Cyprus.

All players focus on bundling to foster competitive advantage. They seek to offer converged services that include fixed telephony, mobile communications, internet and pay TV. They place particular emphasis on integrating a pay TV offering that includes prime content, especially football. However, the costs of football content rights cannot always be recovered by the corresponding revenues. The Commission for the Protection of Competition (CPC) recently decided that cross subsidising the cost of football content rights is a prima facie infringement of competition law and of Article 102 of the TFEU. Recently, some market players have sought to explore the advantages of content sharing.

All market players are eager to deploy their own infrastructure, and are either already doing so or are in the process of making the necessary plans. However, they do not pursue co-investment strategies, apart from occasional joint projects (e.g. CYTA and Cablenet co-investing to install a network connecting Limassol and Paphos).

CYTA dominates both the fixed and mobile market but faces increasing competition that leads to continuously eroding market shares. In September 2018, it launched a retail high-speed broadband service up to 100 Mbps, based on copper (using vectoring and bonding) and up to 1 Gbps on the FtTH network it deploys.

Under new ownership, MTN, the second-largest mobile operator, has refocused its strategy. It is putting more emphasis on the fixed market and seeking to invest in ultra-high speed broadband infrastructure.

Cablenet covers most major cities (Nicosia, Limasol, Larnaca) with its own network (DOCSIS 3.0), and currently serves other cities by using CYTA’s wholesale products. It complements its fixed offering with mobile services, based on an MVNO agreement with CYTA. However, its share of the mobile market remains marginal.

In the mobile market, Primetel has been gaining market share and exerting competitive pressure, resulting in reduced retail prices.

2.1. Fixed markets

DSL remains the predominant technology for the delivery of broadband access services. It accounts for around 80 % of broadband provision, a figure that has remained stable over the past 3 years. The main competition for DSL comes from cable, which accounts for almost all of the remaining 20 % of

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broadband provision. This percentage share of cable has also remained stable over the past 3 years. FTTH/B accounts for a very small number of broadband connections.

The penetration of fast broadband has gradually increased in the past 2 years, rising from 3 % in July 2016 to 15 % in July 2018. However take-up of fast broadband not only lags behind the EU average but this lag is slowly increasing. Penetration of ultrafast broadband is just starting to grow, and in 2018 it surpassed 1 % for the first time (2 % in mid 2018). The gap between ultrafast broadband penetration in Cyprus and the EU average for ultrafast broadband penetration is increasing rapidly.

In 2018, there was a noticeable shift of subscribers away from packages of <10Mbps (from 58 % of
broadband subscriptions in July 2017 to 28 % in July 2018) and towards packages of 10-30 Mbps (from 30 % to 54 % respectively).

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Fixed broadband prices in Cyprus are in general higher than the EU average. At the ultra-high-speed end (above 100 Mbps), prices in Cyprus are between 2 and 3.5 times higher than the EU average. This partly explains the very low uptake of ultra-high-speed services. On the other hand, the comparison with the EU average is more favourable for offers that include a TV component. In fact, prices for ‘3-play’ bundled subscriptions (comprising TV, internet and telephony) are slightly lower than the EU average for both the 12-30 and 30-100 Mbps baskets (1 % and 4 % respectively). This is also reflected in the broadband price index.

2.2. Mobile markets

Competition in the mobile market remains intense. During the last year, the mobile market share of the incumbent CYTA eroded by 1.65 %, a share that was mainly gained by Primetel. Operators continue to invest in network coverage to strengthen their competitive position. MTN and CYTA already publicise their 4.5G coverage in all major urban centres. They also use bundling to make their offers more attractive.

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4 Source: Study for fixed broadband prices in Europe 2018 (Empirica, project SMART 2016/0044), to be published. Comparisons are for the least expensive price (PPP) per basket. Each basket is defined based on the speed bracket (up to 10 Mbps, 10-30 Mbps, 30-100 Mbps, 100-200 Mbps) and the service components (internet, ‘2-play’ with internet+telephone or internet+TV, and ‘3-play’ with internet+telephone+TV).

5 The fixed broadband price index weighs the cheapest retail offers from: standalone, double play (BB + TV, BB + fixed telephony) and triple play (BB+TV+fixed telephony) and three speeds categories - 12-30 Mbps, 30-100 Mbps and +100 Mbps. This indicator presents values from 0 to 100 (which should not be read as prices) and the higher the values, the better the country performs in terms of affordability of prices relative to purchasing power.
Around 20% of telecom bundles contain mobile telephony, a percentage that has doubled in the past 3 years, though this represents barely 3% of the total mobile subscriptions. Moreover, around 45% of all mobile subscriptions, which is 75% of all the post-paid subscriptions, have a contract that contains mobile broadband data.

Prices for mobile-broadband-only services are substantially higher in Cyprus than in the rest of the EU, with the exception of low-volume baskets (256 MB and 512 MB), where prices are very close to the EU average. In higher-volume baskets (1, 2, 5 and 10 GB) Cyprus is the most expensive of the EU Member States. For the 5 and 10 GB baskets, prices in Cyprus are more than 50% higher than in the second-most expensive EU country.

The picture is better - but the trend is similar - for voice and data bundles. For the 100-MB-and-30-calls basket, prices in Cyprus are 35% cheaper than the EU average, while for the 500-Mb-and-100-calls basket they are practically identical. However, prices in Cyprus for higher-consumption baskets are substantially more expensive than the EU average, and are almost twice as high for the 5-GB-and-100-calls basket.
3. Regulatory developments

3.1. Spectrum

Cyprus has assigned 23% of the 2090 MHz overall harmonised spectrum for broadband\(^6\). The spectrum that remains to be assigned is mainly in the 700 MHz and the 2.6, 3.4-3.8 and 26 GHz bands\(^7\).

During 2018, Cyprus has initiated an auction for a third lot in the 800 MHz and 2.6 GHz bands (total spectrum of 75 MHz). Cyprus had auctioned the entire spectrum in 2016 but the third lot was not authorised due to lack of demand. Submission of applications was concluded in December 2018. Cyprus expects to complete the assignment of this package by June 2019\(^8\).

The Cypriot authorities are currently seeking to secure frequencies in the 600 MHz band, in order to migrate Velister (the private, national DTV operator), which transmits exclusively within the 700 MHz band. For this purpose, Cyprus processed new assignments to ITU in recent years through the procedures described in the GE06 plan. Cyprus has now concluded the coordination procedure with all neighbouring states\(^9\) except Turkey, which refuses to enter into any coordination discussion. Despite this setback, Cyprus intends to move forward with its plans to secure frequencies in the 600 MHz band, making use of the non-interference provision. This provision effectively allows transmission, even without completing the coordination procedure. The current intention is to start parallel transmission in March 2019 and end it in July 2019. However, the main issue with this plan is the potential interference from TV broadcasts in the 700 MHz band, coming from the occupied territories. This effectively prevents the auctioning of the 700 MHz band freed up by the migration of Velister. Cyprus expects that once such broadcasts stop, there will be interest from the market. As it has been already mentioned Cyprus further intends to auction the entire 3.4-3.8 GHz band and the 26 GHz band, if all relevant issues are resolved and the migration process is complete, the 700 MHz band.

3.2. Regulated access

In May 2018, CYTA published a reference offer and prices for a VULA (virtual unbundled local access) wholesale product. CYTA’s publication was aimed at launching a retail high-speed broadband

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\(^6\) The 5G spectrum-readiness indicator is based on the amount of spectrum already assigned and available for use for 5G by 2020 within the so-called 5G pioneer bands in each EU Member State. For the 3.4-3.8 band this means that only licences aligned with the technical conditions annexed to Commission Decision (EU)2019/235 are considered 5G-ready. However, the percentage of harmonised spectrum takes into account all assignments in all harmonised bands for electronic communications services (including 5G pioneer bands), even if this does not meet the conditions of the 5G readiness indicator.

\(^7\) The Ministry has consulted with the market on the 1.5 GHz band but there was no interest at all, mainly because this is a download-only band.

\(^8\) On 20 May 2019, the Department of Electronic Communications announced the temporary highest bidder, Cablenet, who will be awarded the rights of use for this spectrum within 30 days, subject to fulfilling the requirements of the tender.

\(^9\) Greece, Israel, Palestine, Lebanon, Syria and Egypt.
service and followed the OCECPR Market Analysis Decision\(^\text{10}\) on the market for wholesale local access provided at a fixed location (market 3a of the 2014 Recommendation on relevant markets).\(^\text{11}\) Although market players see the introduction of VULA as a positive development, there is concern about the complexity and the high level of wholesale prices.

All seven markets that are still subject to the SMP Regulation in Cyprus\(^\text{12}\) have been analysed within the last 3 years. OCECPR intends to notify companies operating in markets 1 and 2 in the second half of 2019 as well as Markets 18 and 15 of the 2003 Recommendation in the first half of 2019.

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In 2018, the NRA concluded analyses of two markets. Its conclusions are outlined in the two bullet points below.

- The NRA decided that the market for wholesale trunk segments of leased lines (Market 14 of the 2003 Recommendation on relevant markets) is no longer susceptible to ex-ante regulation, and withdrew the previously imposed regulatory obligations\(^\text{14}\).

- The NRA adopted a decision\(^\text{15}\), which designates the incumbent (CYTA) as having SMP in the market for wholesale high-quality access provided at a fixed location (Market 4 of the 2014 Recommendation on relevant markets). This decision imposed the remedies of: transparency; non-discrimination; accounting separation; access to and use of specific network facilities; price control and cost accounting; and collocation. In response to this notified draft measures, the Commission issued comments urging the NRA to consider imposing a lighter set of remedies in the more competitive areas and/or bandwidth segments, where appropriate.

According to the decision regulating the market for wholesale local access provided at a fixed location, the VULA obligation is imposed on the high-speed network of the SMP operator. The decision also imposes to the SMP operator obligations for: (i) cost orientation; (ii) economic and technical replicability; and (iii) equivalence of inputs. Obligations such as ‘duct access’ and ‘backhaul’ services are also a prerequisite for the deployment of alternative infrastructures, especially given the

\(^{10}\) "Η περί των αποτελεσμάτων Εξέτασης Αγοράς και της Επιβολής Ρυθμιστικών Μέτρων στον Οργανισμό με Σημαντική Ισχύ στη σχετική Αγορά Χονδρικής παροχής τοπικής πρόσβασης σε σταθερή θέση (Αγορά 3α), Απόφαση του 2017” 91/2017.


\(^{12}\) They include all markets identified in the Commission Recommendation on relevant markets of 2014, i.e. Market 1 (Wholesale call termination on individual public telephone networks provided at a fixed location), Market 2 (Wholesale voice call termination on individual mobile networks) Market 3a (Wholesale local access provided at a fixed location), Market 3b (Wholesale central access provided at a fixed location for mass-market products), and Market 4 (Wholesale high-quality access provided at a fixed location) as well as two markets of the 2003 Recommendation, i.e. Market 15 (Access and call origination on public mobile telephone networks) and Market 18 (Broadcasting transmission services, to deliver broadcast content to end users).

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\(^{14}\) “Η περί της Άρσης των υφιστάμενων ρυθμιστικών υποχρεώσεων της ΑΤΗΚ στην Αγορά Ζευκτικών Τμημάτων Χονδρικών Μισθωμένων Γραμμών, Απόφαση του 2018” 622/2018.

\(^{15}\) “Η περί των αποτελεσμάτων Εξέτασης Αγοράς και της Επιβολής Ρυθμιστικών Μέτρων στον Οργανισμό με Σημαντική Ισχύ στη σχετική Αγορά Χονδρικής Τερματικών Τμημάτων Μισθωμένων Γραμμών (Αγορά 4 της Σύστασης 2014/710/ΕΕ της Ευρωπαϊκής Επιτροπής: Χονδρική παροχή πρόσβασης υψηλής ποιότητας σε σταθερή θέση), Απόφαση του 2018” 621/2018.
anticipated replacement of the copper access network, where an optical-fibre-access network is deployed.

The OCECPR imposes fixed and mobile termination rates on the basis of a bottom-up, long-run incremental cost (BULRIC) model. The regulated fixed termination rates (FTR) cap for 2018 has been set at 7 euro cent/minute for local termination, and applies to all operators. The regulated mobile termination rates (MTR) cap for 2018 has been set at 69 euro cent/minute for all MNOs/ MVNOs (including Primetel, for which a glidepath was imposed previously, allowing MTR a higher-than-the-regulated cap until 2018). The above rates apply only for EEA originated traffic.

On the Broadband Cost Reduction Directive (already transposed in 2016) OCECPR reports that any practical examples of cross-sector network deployment (notably the use of the Electricity Authority’s poles by electronic communication operators based on commercial terms), were in place prior to the transposition of the Directive.

OCECPR continues working to promote transparency of physical infrastructure. The geographic information system (GIS) portal is now interoperable, with a fully automated, electronic permit-granting procedure system. The system is available for use by electronic communications network operators, and will gradually replace the current use of written forms.

However, companies operating in the market have expressed concerns about the procedures and delays for granting permits for antenna masts. While the relevant law sets strict deadlines, getting a permit can take more than a year. In some cases, local authorities have announced that they will not accept any more requests for antenna permits. This could deter the effective deployment of 5G networks. The competent ministry acknowledges this problem and is seeking measures to alleviate it. A process on the modernization policy framework on the installation of antenna masts has been recently initiated, involving all relevant stakeholders.

4. End-user matters

According to the 2018 Consumer Markets Scoreboard, of the 25 services markets assessed by consumers in Cyprus ‘mobile telephone services’, ‘fixed telephone services’ and ‘internet provision’, rank quite high (4th, 7th and 12th respectively) and above the “services” average”. They also outperform the respective EU averages (by 5.6, 4.6 and 2.4 points respectively). In 2018 (until November) the Commissioner received 420 complaints (compared to 174 in 2017), most of which were resolved through mediation. The majority concerned subscription to multimedia services (383) and charges following contract termination (24). According to a consumer association, the complaints that they receive most frequently from consumers concern the cost of switching, multimedia services, delays in establishing new connections, quality of service, and internet speed.

a. Net neutrality

In 2018, OCECPR’s found that some ISPs were limiting the access rate of heavy users based on their traffic volume to prevent network congestion. OCECPR informed the ISPs concerned that their

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16 The relevant decision was issued in November 2018 and applies with retroactive effect from 1 January 2018.
18 “Ο περί Ρυθμίσεως Ηλεκτρονικών Επικοινωνιών και Ταχυδρομικών Υπηρεσιών (Τροποποιητικός) Νόμος του 2016", 104(I)/2016 (14/10/2016).
19 The market performance index (MPI) is a composite indicator ranging from 0 to 100 which measures how well a given market performs according to consumers. See Eurobarometer Consumer Markets Scoreboard 2018, p 12 and p 100, available at https://ec.europa.eu/info/sites/info/files/consumer-markets-scoreboard-2018_en.pdf.
practices may have constituted an infringement of, and requested further action to ensure compliance with the provisions of Regulation (EU) 2015/2120 and Decree 72/2017. However, OCECPR did not impose any penalties on the ISPs.

In addition, OCECPR identified two zero-rating products, offered by a single provider (the products were for music and social media applications). OCECPR carried out a formal assessment of these services and concluded that since only a limited number of subscribers used the zero-rated applications (0.01% of the providers’ subscribers used the music application and 0.1% used the social media application), there was no immediate impact on end-users’ rights. For this reason OCECPR did not take any action against the provider.

b. Roaming

There has been a sharp increase in the use of roaming services for voice calls by Cypriot subscribers, following the introduction of RLH. Specifically, in Q4 2017 there was 2.5 times more voice roaming than in Q4 2016, while in Q1 2018 where was 2.7 times more voice roaming than in Q1 2017.

OCECPR has not identified any cases of confirmed or potential non-compliance with the RLH rules, which are set out in Regulation (EU) 2015/2120 and have been in force since June 2017. It has not observed any increases in domestic mobile prices. Also, it has not received any complaints about the quality of services (in particular the data speed and connectivity) either from Cypriot consumers travelling within the EU or from foreign subscribers roaming in Cyprus. There have been only seven complaints about high charges for tourists unintentionally using services from mobile operators active in the area of Cyprus which is out of the control of the Republic of Cyprus.

c. Emergency communications - 112

Emergency communications for people with special needs are currently ensured through fax (to a long number) or SMS. The service allows people with special needs to send a (written) message to the universal service provider (CYTA), which is then relayed to the 112 centre. The 112 centre handles it as usual. The use of this service is free for all. In cases where a fax is used, the police department can obtain caller location information (CLI) from the universal service provider. When an SMS is used, there is no possibility to obtain CLI, unless it is included in the message. There are no statistics on the current system.

A new system to support emergency communications is currently in place as part of the framework of the eCall system. In the new system, CLI for 112 calls is based on operator data. The police department system links to the system of the MNOs and gets the information directly. However, it seems that such information is currently limited to cell level.

Currently there are six call centres serving 112 calls, one in each prefecture. With the new system, there will be a single call centre in the premises of the police department. There will be a second call centre in Paphos for redundancy purposes.

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For end-users with disabilities, an application for smart phones (both Android and IOS) is under development. It will require registration when downloading the application, so the person calling will be identified. For CLI, the application will use mobile data, wifi and GPS data. The new system and smart phone application are in a testing phase, and are expected to become operational within the first half of 2019.

The Commission is currently looking into the functioning of emergency communications and the 112 number in Cyprus, with particular focus on CLI.

d. Universal service

There were no new developments or changes to report on the scope of the universal service (which includes: access to fixed telephony; special retail packages to end-users with disabilities and/or on low income; electronic directory services; and free access to the emergency number) or the designation process. Broadband is not included in the scope of the universal service, and its possible inclusion within the scope of universal service is currently not under consideration. Social tariffs include 50% discounts for low-income households and free-of-charge services for end-users with disabilities. In 2018, no claims were received for compensation and therefore the financing mechanism was not activated.

5. Institutional issues

The NRA, OCECPR, has sole competence for the tasks listed in Article 5 of the EECC, with two exceptions. The first exception is ensuring consumer protection and end-user rights in the electronic communications sector, which is a responsibility that OCECPR shares with the Ministry of Commerce (Department of Consumer Protection). The second exception is spectrum-related tasks, which are under the sole competence of the Ministry of Communications and Works (Department of Electronic Communications). The legislator will also need to appoint the competent authority for the geographic surveys of networks.

Currently there are two authorities competent to address consumer issues. The first authority is the Commissioner (NRA), which approaches such issues on the basis of sector-specific consumer-protection regulation, i.e. within the context of promoting competition and innovation in the electronic communications market. The second authority is the Department for the Protection of Consumers (Ministry of Commerce), which approaches consumer complaints on the basis of consumer protection regulation, i.e. as with any other sector.

Undertakings providing or intending to provide electronic communications networks and services are subject to the general authorisation regime set out in the Electronic Communications Law 112(I)/2004. The OCECPR levies annual administrative charges on all registered providers of electronic communication services (under general authorisation). Administrative charges for 2018 amounted to €2,472,910.

In 2018, the OCECPR passed new secondary legislation on numbering resources (Decree 63/2018), which came into force in March 2018. The changes introduced in the secondary legislation were based on the results of the annual study on the efficiency of the Cyprus numbering plan. The main changes are listed in the bullet points below.

- Withdrawal of the capability of providers to reserve numbering resources for future use. OCECPR now assigns numbering resources based on justified (regarding the need) applications.

- Withdrawal of the assignment fee for numbering resources, while maintaining an annual usage fee which applies from the day of assignment.
- Reduction of numbering fees per category.

6. Conclusion

Fixed network coverage is one of the factors helping Cyprus to benefit from the digital economy. The main challenge faced by the country is to encourage take-up of high-speed broadband. Low take-up is influenced by factors such as pricing, a lack of compelling content and low digital literacy. Market players seem keen to invest in new networks and launch 5G services. A new broadband strategy and plan, setting concrete targets and actions in line with the European gigabit society and the 5G action plan can promote this investment. Another important enabler of investment in new networks and 5G services is the timely award of spectrum. The unwillingness of local authorities to grant permits for antenna masts and delays in the relevant procedures could deter the effective deployment of such networks.