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Competition and Telecommunications' Network Sharing

October 23, 2020

WORKSHOP THEME

NETWORK SHARING – NEW GENERATION OF NETWORKS
– 5G REGULATORY – STATE AID – ANTITRUST



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Competition and Telecommunications' Network Sharing International online workshop

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Editorial

On “Competition and Telecommunications’ Network Sharing” as a Topic of a Workshop and its Proceedings

The European Union’s digital future is counting on fast and robust development of 5G networks. We are promised a radical change in our ways of doing business, communicating, working, learning, operating in our everyday lives. This technological leap into the future should be carried out by high tech private companies, mobile network operators in the first place. They will have to make significant investments and, at the same time, fit into regulatory framework consisting, inter alia, of EU competition law. Fast deployment of 5G networks represents, on one hand, not only an incentive but rather a necessity to co-operate, to share some components of this new infrastructure under the so-called network sharing agreements, which, on the other hand, inevitably entail rapprochement and cooperation of direct competitors in an oligopolistic market. This situation creates a challenge for the wide range of stakeholders: for companies and investors, for regulators, for legal experts. If our future is really supposed to be digital, then its form and shape, its pros and cons will largely depend on whether and how the *quadrature of the circle* can be solved. Will our brave new 5G digital world be competitive and cooperative at the same time?

It is no wonder that the topic of sharing 5G networks is the subject of many articles and expert analyses today.¹ Another contribution to the ongoing discussion was the international online workshop “*Competition and Telecommunications’ Network Sharing*” that took place on 23 October 2020. It was organized by the Department of European Law of the Charles University in Prague, a pedagogical and research workplace focused on EU law, including competition law.² Its partner and the driving force behind the publication of the present Proceedings was *Antitrust*, the only Czech-Slovak review publication of competition law.³ The workshop was kindly supported by the Representation of the European Commission in the Czech Republic and by the Czech law firm Rowan Legal. Thanks to almost one hundred online participants the scope of the workshop was markedly international, even though its “centre of gravity” was the area of Central Europe. The attractiveness of the event was undoubtedly helped by the fact that “Brussels’ point of view” was presented by Rita Wezenbeek, Head of Unit C1, Antitrust

Telecoms, of the European Commission’s Directorate-General for Competition.

Regarding the value of the workshop’s content, the topics that it intended to cover were crucial: 1) What is sharing? 2) Ways to share mobile networks; 3) The importance of mobile networks for the economy and digital transformation of the economy; 4) 5G - outlook for the future; 5) State and support of mobile networks; 6) Recommendations, prospects, next steps. These became the subject matters of presentations that, in their majority, have been converted into chapters of the present publication. As the organizer and moderator of the event, I am glad to briefly introduce the texts, which are further presented to the readers’ attention.

The article by the former first vice-president of the Czech Competition Authority, Hynek Brom, suitably introduces the topic itself. It is right to start by clarifying the concepts and key definitions. What do regulators mean when they talk about network sharing? And when does this sharing amount to an agreement prohibited by competition law? These are the basic questions that undoubtedly need to be answered, although a straightforward answer is not always easy and clear in the complex setting of the current digital telecommunication sector. A general cost/benefit analysis is then outlined in order to show what network sharing can give and take in competition law terms. As a result, however, no simple assessment tool is ready-made to quickly decide on the competition law compatibility of every network sharing agreement. The outcome of the competition case analysis will always depend on its specific circumstances; however, the criteria of necessity, suitability and comparison should be universally applicable to draw the line between anti-competitive and acceptable network sharing.

Introduction to the complex area of 5G networks and their sharing from another angle is provided by the contribution of Pavel Šubrt, Head of Price Regulation Unit of Czech Telecommunication Office (CTU). He describes not only the regulatory role CTU has in the 5G networks deployment process but also provides an overview of the main pros and cons of the mobile network sharing as well as summary of different types of network sharing. Ex-ante regulators’ approach to mobile network sharing is described as not negative by default as they may even promote network sharing in many instances, which could also be demonstrated by national roaming obligation incorporated into the latest auction of frequencies organized by CTU in the second half of 2020. CTU as the ex-ante regulator, however, is not the first line authority to step in and carry out assessment of network sharing agreements’ compliance with legal requirements as this privilege belongs to competition authority.

A view on definitions and initial premises, but set in a certain historical perspective (that of ADSL development in Czechia), is also brought by the contribution written by Martin Lukáš and Jana Duchoňová from Weinhold Legal law firm. Based on the past experience they argue that it is necessary to regulate the market within the appropriate time limits as well as, if not more importantly, with the appropriate weight and intensity. It is then more likely the sufficient regulation by national authorities and the European Commission, than the arrival of new operators on the telecommunication market, that can ensure a truly competitive environment for virtual operators in the market and expected benefits for end users.

1 See for instance: KLIKS, A., MUSZNIKI, B., KOWALIK, K. et al. Perspectives for resource sharing in 5G networks. *Telecommun Syst* 68 (2018). Available at: <https://link.springer.com/article/10.1007/s11235-017-0411-3#citeas>; OUGHTON, E.J., FRIAS, Z., The cost, coverage and rollout implications of 5G infrastructure in Britain, *Telecommunications Policy*, Volume 42, Issue 8, 2018; GERADIN, D., KARANIKIOTI, T., Network Sharing and EU Competition Law in the 5G Era: A Case of Policy Mismatch (16 June 2020). Available at SSRN: <https://ssrn.com/abstract=3628250>; PÁPAI, Z., MCLEAN, A., NAGY, P., SZABÓ, G., GERGELY C., The impact of network sharing on competition: the challenges posed by early versus mature 5G. *CERS-IE WP No. 2020/33* (July 2020). Available at: <https://www.mtaki.hu/wp-content/uploads/2020/07/CERSIEWP202033.pdf>; WATTS, J.T. *A Framework for an Open, Trusted, and Resilient 5G Global Telecommunications Network*. Atlantic Council (March 2020). Available at: <https://www.atlanticcouncil.org/wp-content/uploads/2020/03/Framework-for-a-5G-Network.pdf>; MŇUK J., Sharing Networks, Co-Investing in Co-operating in Telecommunications: Current and Prospective Competition Scrutiny, *Antitrust* No 3/2019.

2 Further information available at: <https://www.prf.cuni.cz/en>.

3 Further information available at: <http://www.antitrust.cz/>.

The chapter written by Miroslav Jakab, the Ph.D. candidate at Charles University Law Faculty, asks the question whether the new generation of networks would face stricter competition law enforcement. It is always difficult to predict the future approach of competition authorities, but on the other hand, it goes straight to the heart of the matter: just how strict of a regulatory framework will the 5G network builders likely face in the EU? The chapter first discusses how new networks may change the investigation of competitive concerns related to network sharing. Second, it analyses some of the recent developments in the case law of EU courts, namely a possible comeback of the 'more economic approach' and the emergence of clearer rules regarding the standard of proof underpinning the theories of harm. In the end it concludes that there is no clear reason for a stricter or more frequent scrutiny of mature 5G network sharing that could be derived from the expected features of these networks or the broader context of the current development in EU competition law.

Jiří Mňuk, the Ph.D. candidate at Masaryk University Law Faculty discusses in his contribution the issue of metrics by which the Commission and other competition authorities assess whether the geographical scope of mobile network sharing is compliant with competition law. After reviewing their approaches, his chapter then discusses some considerations for finding a geographical benchmark of network sharing which would be able to reap the benefits of sharing in various areas while remaining ordinarily compliant with competition law. It is clear from the existing decision-making practice that the Commission is stricter to network sharing in urban areas, although a detailed analysis does not always justify such strictness. It should not be taken for granted that in densely populated urban areas the network sharing leads to unnecessary restriction of infrastructure competition, lower cost saving and extended information exchange between competitors. The author then proposes an appropriate version of the two-step analysis required by proper application of Article 101 TFEU that would bring conclusions of competition authorities closer to the specific circumstances of each competition case involving the network sharing.

A chapter titled "Network sharing and counterfactual analysis under EU competition law" was contributed by Jiří Kindl and Barbara Dufková, authors attached to Charles University Law Faculty and the law firm Skils. They first explain the counterfactual analysis as an analytical tool used to evaluate the effects of potentially anti-competitive conduct. Then they explore the usage of network sharing as counterfactual to mergers and its implications for counterfactual analysis in network sharing cases. After discussing counterfactual analysis in relation to specific cases, they conclude that the counterfactual analysis in network sharing cases always needs to consider relevant market realities and identify, in view of those realities, a realistic counterfactual scenario that would most likely prevail. Indeed, not every conceivable alternative is a real and necessary alternative. Very often, however, the competition authority must work with more counterfactual scenarios, and each of them deserves a separate analysis. Then it must ensure the compatibility of different counterfactuals and try hard to identify the most realistic of them.

Implications of network sharing for merger control are dealt with in the chapter contributed by Goran Serdarević and Peter Davies from Frontier Economics. They consider the extent to which network sharing can be considered a viable means of delivering similar efficiencies to a merger, and therefore the extent to which they are a credible basis for prohibiting consolidation on mobile telecommunication markets. Such weighing of various aspects and consequences is even more important, they write, in the light of The General Court Judgement to reverse the EC's blocking of O2/Hutchison, which indicates that more weight should be put on efficiencies in future merger assessments. This should in turn mean a more involved discussion on whether the potential pro-competitive merger benefits can realistically be achieved within plausible network sharing counterfactuals, rather than treating the efficiencies submissions as a largely formalistic part of the merger notification process.

Protection of competition in a broader sense also includes the control of state aid. This particular aspect is focused on by the contribution of Jan Měkota and Anna Cervanová from Rowan Legal law firm, that deals with the consequences of state aid for network development and network sharing. No wonder that the state aid issue comes to the fore in the context of 5G networks building as its high cost can be mitigated in mutually contradictory ways: the market-based one that consists in network sharing, while the state-supported one would entail the help from public resources. The authors maintain the market-based option should always be preferred. The state aid should be limited to cases where the market is unable to deliver the connectivity that would meet EU strategic goals, such as in remote and sparsely populated areas where building of networks is expensive and profitability is low. There should be a rule that if private investment is possible, state aid must not crowd it out. Correspondingly, the regulatory framework should support natural market development without the necessity for ex-ante regulatory interventions, which should be gradually phased out and completely replaced by competition rules.

Certainly, there are competitive aspects of network sharing that did not find their way into the workshop or the following chapters. In addition, each new step in the development of 5G networks can reveal new problems that will have to be addressed by the regulators sooner or later. Even so, I believe that the texts following this introduction contain a lot of valuable knowledge, qualified analysis, and practical experience that will be appreciated by any reader who is interested in the regulation of telecommunications networks, competition law, or the digital future of the European Union in general.

I wish everyone an instructive reading.

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The Regulatory Role of the CTU in the 5G Network Deployment Process

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Abstract This contribution aims at describing the role the CTU, as the ex-ante regulator in the electronic communications sector, plays in regard to the mobile network agreements, concerning namely the new (fifth) network generation, between mobile network operators. It strives to provide an overview of the main benefits and detriments of mobile network sharing as well as a summary of different types of network sharing. It shows that the ex-ante regulators are not hostile to this type of cooperation by default but on the contrary in many instances promote such behaviour. In case the network sharing agreement is concluded on a commercial and voluntary basis, the principal responsibility to verify the agreement does not constitute a prohibited agreement lies on the shoulders of a competition authority, which is the ÚOHS in the Czech Republic. The CTU can take the network sharing agreement into account during its relevant market analysis when assessing potential joint significant market power. However, in order to define market as relevant and therefore as susceptible to ex-ante regulation, it needs to pass the three-criteria test.

Key-words 5G networks sharing, types, benefits and drawbacks of network sharing, voluntary and mandatory sharing

The aim of this short article is to introduce the role the Czech Telecommunication Office (CTU), as the ex-ante electronic communications regulator, plays in the area of expected upcoming 5G network sharing and more generally in respect to its regulatory options concerning 5G network deployment.

In order to give a correct overview of a regulatory tool kit lying at CTU's disposal and principles stemming namely from the Act. 127/2005 Sb., on Electronic Communications and in broader terms from legislative acts forming part of the European regulatory framework¹, expectations associated with 5G network deployment should be described first together with the most important benefits and drawbacks that can be expected from any type of mobile network generation sharing.

1. 5G expectations

In the Czech Republic, prospective 5G networks have been openly debated since 2014 and these discussions had already begun shortly after the previous spectrum auction² organised by the CTU at the end of 2013 and 4G network deployment which started to take place shortly thereafter. Ever since, there have been an innumerable quantity of scientific and expert papers³ written describing the technical aspects of this new generation of mobile network.

As the purpose of the Competition and Telecommunications' Networks Sharing International workshop, held on October 23, 2020,

is to bring together rather legal and regulatory than technical experts, let us focus just on the general characteristics of 5G networks expected from the end users' perspective.

The fifth generation of telecommunications technologies, 5G, is fundamental to achieving a European gigabit society⁴ by 2025. The aim to cover all urban areas, railways, and major roads with uninterrupted 5G wireless communication can only be achieved by creating a very dense network of antennas and transmitters. In other words, the number of higher frequency base stations and other devices will increase significantly.

5G networks will allow much larger volumes of data to be transported more quickly and with reduced response time which will enable instantaneous connectivity to billions of devices, the internet of things, and the connected population. The possibilities that the 5G offers, such as downloading or uploading one gigabit of data per second, may provide advantages, for instance to the military and medical research.

However, because it is more complex and requires a denser coverage of base stations to provide the expected capacity, 5G will cost much more to deploy than previous mobile technologies. According to the European Commission estimates⁵, to reach the target, including 5G coverage in all urban areas, this cost is estimated at around 500 billion € by 2025 in the EU. In this respect, tools to enhance 5G deployment in the EU have been described by the EC in its communication⁶ since 2016.

5G technology differs from the previous generations of mobile networks by exploiting radio spectrum in higher frequency bands – particularly frequencies above 24 GHz, in the part of radio spectrum which is often named as millimetre waves. The United States is pioneering with the first deployments in the 28 GHz band, while the European Union is not far behind, having harmonized conditions for the use of 26 GHz band recently.⁷ Further activity can be expected

1 Until recently the European regulatory framework was formed most importantly by three directives of the European parliament and of the Council, namely by directive 2002/19/EC on access to, and interconnection of, electronic communication networks and associated facilities (Access Directive), directive 2002/20/EC on the authorisation of electronic communications networks and services (Authorisation Directive) and directive 2002/21/EC on a common regulatory framework for electronic communications networks and services (Framework Directive). In 2018, these three directives were merged into and amended by directive 2018/1972 establishing the European Electronic Communications Code.
2 The Czech version of summary from this 800 MHz, 1800 MHz, and 2600 MHz auction can be found on the CTU web pages here: <https://www.ctu.cz/zprava-o-pruabehu-vysledcich-vyberoveho-rizeni-za-ucelem-udeleni-prav-k-vyuzivani-radiovych-kmitoctu>.
3 Among those less purely technical may be put ITU's contribution from 2018: Setting the Scene for 5G: Opportunities and Challenges, online available here: https://read.itu-ilibrary.org/science-and-technology/setting-the-scene-for-5g_pub/811d7a5f-en#page1 or extensive GSMA report from 2019: The 5G Guide, a Reference for Operators.

4 For more information about the see the European Commission web page: <https://ec.europa.eu/digital-single-market/en/connectivity-european-gigabit-society>.

5 See the European Commission web page: https://ec.europa.eu/commission/presscorner/detail/en/MEMO_18_4084.

6 See the *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 of 14 September 2016.

7 See the *Commission Implementing Decision (EU) 2019/784* of 14 May 2019, and the *Commission Implementing Decision (EU) 2020/590* of 24 April 2020.

globally in the bands identified for mobile networks by the World Radiocommunication Conference 2019: 26 GHz, 40 GHz, 47 GHz, and 66 GHz.⁸

Thanks to both the laws of physics and larger bandwidth available, these new frequency bands shall offer a boost to transmission capacity and reduction of network latency as against the lower frequency bands. When it comes to radio wave propagation, however, the laws of physics are less forgiving: the access point range may typically be in the order of dozens of meters (units of hundreds of meters maximum), and successful coverage of a busy outdoor area may require multiple access points to be installed in order to avoid attenuation by both constructions and crowds of people. All this will result in a new, specific economy of coverage.

In contrast to lower frequency bands, it will be economically unfeasible for a network operator to fully cover a country's territory with millimetre-wave networks. MNOs will of course strive to cover the areas where they expect demand for high transmission capacity and low latency: typically city centres, sports and culture venues, transport terminals, tourist destinations, etc. There will also be clear "not spots" where coverage in high frequency bands makes sense neither economically, nor socially. Alongside these locations, there will be a whole range of "grey zones," where building millimetre-wave access points might have some justification, but the business risk would seem too high to an MNO. Yet there might be stakeholders wishing to have the area covered, such as management of a university, hospital or industrial campus; municipal administration; or businesses wishing to use radio technology to provide residential broadband.

This is a regulatory challenge. The common approach to managing rights to use radio frequencies in the lower frequency bands consists in awarding exclusive nation-wide or region-wide licenses, connected with geographic coverage obligations. That will not work in millimetre waves for obvious reasons. Therefore, regulators will be exploring new approaches. One option is opening up the opportunities for diverse players to build networks, by granting non-exclusive rights. CTU has recently consulted a draft measure with the intention to open 1 GHz of spectrum in the 26 GHz band for 5G networks in the regime of individual licensing.⁹ There are other options as well, such as an exclusive license combined with a "lease it or lose it" obligation; but in general, the use of higher frequency bands for 5G will increase pressure on the operators to share either networks, or spectrum between the players.

5G network coverage will require denser deployments in radio access networks than we have been previously used to. All that brings forward the importance of cooperation with real estate owners, in particular, when speaking about indoor coverage and coverage with millimetre waves.

Public authorities in EU Member States are specifically required by EU law to make the physical infrastructures they control available for deploying small-area wireless access points, including 5G equipment.¹⁰ Making infrastructures available of course comprises a strategic decision by the public authority on the approach to network deployment: should it be a single neutral host network, a framework enabling multiple operators to install their networks on public infrastructures, or a tender for a single exclusive operator license?¹¹ Local or municipal authorities wishing to accelerate 5G deployments may find it necessary to opt for

a neutral host network built and/or operated by the public authority or on its behalf.¹²

Real estate owners of attractive locations could leverage their gatekeeping position for concluding preferential agreements with selected operators, which would ultimately damage both availability of services, and competition. Therefore, regulators may choose to impose on operators building access networks in closed campuses the obligation to also provide network access to their competitors - yet another type of network sharing.¹³

2. Network sharing

The most important benefits motivating operators to share networks (or sometimes motivating NRAs to impose network sharing obligations) and drawbacks motivating regulatory bodies to carry out rigorous scrutinies of such network sharing agreements will be described here. The list of pros and cons stems from a comprehensive summary¹⁴ made by Body of European Regulators for Electronic Communications (BEREC).

3. Benefits of network sharing

3.1 Cost reduction

Cost reduction is a driver for operators to engage in infrastructure sharing. As the saving potentials are highly context and network design dependent, the saving percentages vary. Active sharing (which typically includes passive sharing) can achieve greater savings than passive sharing. The cost saving is likely to differ depending on technology type, the location where the sharing takes place (i.e., city centre vs. rural areas), and the timing when the sharing is implemented (i.e., greenfield vs. network consolidation).

3.2 Improved efficiency (with respect to administrative costs and efficient use of spectrum)

Higher efficiency associated with mobile network sharing may be derived both from frequency re-use allowing spectrum users to exploit under-used spectrums and from administrative efficiency improvements (i.e., reducing the costs and efforts related to obtaining necessary documentation to set the network).

3.3 Enhancing consumer choice

Network sharing may allow the preservation of service-based competition in certain geographic areas. The reason for this is that it allows operators to operate or remain operating in areas where otherwise it would have been too burdensome and inefficient to individually deploy a network.

Public interest – the environmental and health protection aspects should be taken into account when assessing mobile network sharing. These benefits may be particularly relevant in areas where an outstanding landscape needs to be protected (such as monuments and national parks) and in areas where operators can contribute to town/country planning during the establishment of network infrastructure. Sharing might also decrease energy consumption, thereby lowering the carbon footprint of the electronic communications sector and contributing to the fight against climate change.

8 WRC-1919 identified the following bands for IMT: 24.25–27.5 GHz, 37–43.5 GHz, 45.5–47 GHz, 47.2–48.2 GHz, and 66–71 GHz. See *World Radiocommunication Conference 2019 (WRC-19): Final Acts*, ITU 2020, Res. 241, 242, 243, and 244. https://www.itu.int/dms_pub/itu-r/opb/act/R-ACT-WRC.14-2019-PDF-E.pdf.

9 *Call for comments on the draft measure of general nature - part of radio spectrum utilisation plan No. PV-P/2/XX.2020-YY for 24,25–27,5 GHz band*, 11 August 2020, <https://www.ctu.eu/call-comments-draft-measure-general-nature-part-radio-spectrum-utilisation-plan-no-pv-p2xx2020-yy>.

10 Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018, art. 57(4).

11 About these decisions, see *5G: An Emerging Framework for Irish Cities and Towns. Discussion Document*, 5 August 2020, pp. 32 ff., <https://connectcentre.ie/wp-content/uploads/2020/08/5G-and-Future-Connectivity-Full-Document-FINAL.pdf>.

12 Neutral host networks provide local access networks strictly as a wholesale product to any interested retail operator.

13 This obligation was introduced in the Italian auction of the 26 GHz band in 2018. See *Procedura per l'assegnazione di diritti d'uso delle frequenze nelle bande 694-790 MHz, 3600-3800 MHz e 26.5-27.5 GHz, su base nazionale, per l'utilizzo per l'offerta di servizi pubblici terrestri di comunicazione elettronica a larga banda e ultra-larga, di cui alla Delibera n. 231/18/CONS del 23 [sic] maggio 2018 dell'Autorità per le Garanzie nelle Comunicazioni. Disciplinare di Gara, di cui al Bando di Gara pubblicato nella Gazzetta Ufficiale della Repubblica Italiana n. 80 dell'11 luglio 2018, Quinta serie speciale – Contratti Pubblici*, 11 July 2018, 10.9.5, co. 6., https://www.mise.gov.it/images/stories/normativa/Disciplinare_Gara_multibanda2018.pdf.

14 See BEREC Common Position on Mobile Infrastructure Sharing, BoR(19)110 of 13 June 2019.

4. Drawbacks of network sharing

4.1 Reduced incentives to invest/ability to compete

Sharing agreements can negatively impact incentives for participants to invest in their own infrastructure, as any gains in service offering (relating, for example, to coverage, network quality etc.) resulting from a new investment are likely to be shared with other parties involved. The degree to which other parties benefit from this will necessarily depend on the sharing agreement type. It is possible to design sharing agreements where such effect are alleviated to some extent (for example by requiring a set decision making process or using key performance indicators to ensure continued investment). At the same time, network operators participating in sharing agreements are likely to have a reduced ability to compete independently, particularly, regarding coverage, but with independent core networks the provisioning of services could largely be competitive. This potential drawback is likely to be particularly pronounced in active sharing agreements, as this, for example, limits the ability to independently replace active equipment. Of course, the ability to compete at levels outside shared architecture might remain to some extent. This reduction in incentives and the ability to compete for those parties involved in a network sharing agreement means that end user choice – both between different infrastructure providers and between different service offering – might be reduced. The degree to which these concerns impact dynamics in a given market will depend on context. It is possible, for example, for an infrastructure sharing agreement to provide a greater incentive for investment in a network, as they can reduce the costs to operators of offering coverage in a wide area (compared to when an operator is required to rollout an entire network on its own).

4.2 Requirement for increased coordination between participants

Sharing agreements will necessarily require greater coordination between participants, which will need to share at least some information to collaborate on network deployment. This presents an obvious risk relating to tacit collusion as well as potential breaches of competition law which must be addressed by participating parties. More broadly, sharing agreements might lead to delays in deployment, as joint decision-making processes can add a layer of bureaucracy to the already complex process and potentially reduced incentives of network deployment. Extensive planning coordination can lead to delays at both the “strategic” level (relating to network design and network evolution) and the “operational level” (relating to the actual deployment of the network). Loading a host network site with active equipment from different network operators (which is typical of some passive sharing agreements), for example, might load a site in such a way that the installation of new equipment modules related to the introduction of new technologies might be more difficult. The extent and impact of this drawback type is likely to depend on sharing type and network design.

4.3 Reduced network resilience due to increased demand on host networks/sites

Shared infrastructure might reduce the overall resilience of mobile networks in a given geographic location. This is because fewer independent mobile networks will reduce the ability for end users to switch to alternative network operators when their own host network is unavailable (for example, when needing to contact emergency services). Similarly, network problems (e.g., RAN SW errors) can have a higher impact (affecting a greater number of end users over wider areas) in situations where the RAN is shared. This drawback needs to be balanced against the risk of no network whatsoever being deployed in the absence of a network sharing agreement.

5. Typology of infrastructure sharing types

To structure different types of network sharing, let us shortly outline a list of network items that are typically the subject of network sharing between mobile operators. These definitions were elaborated in a dedicated BEREC common position¹⁵.

15 BEREC Common Position on Mobile Infrastructure Sharing, BoR(19)110 of 13 June 2019.

5.1 Passive sharing

Passive sharing is the common use by two or more operators of passive elements of their respective networks. Passive elements are those which are not able to process or convert telecommunication signals in any way and which are not integrated parts of the system dedicated specifically to the conveyance of signals. Passive elements are sometimes referred to as “unpowered components” as these elements usually do not require a power supply. This is, however, not always the case. For instance, air conditioning for cooling equipment might be considered a passive element, but usually requires an external power supply.

Co-location is a form of passive sharing where the operators share the same location (such as compound, base station sites, rooftops, etc.) for the construction of the base stations. It could be limited to common access to the location. It could also include the use of common masts and other mounting/supporting constructions or cabinets including related installations (such as air conditioning, power supply, etc.).

Site sharing is a form of co-location where two or more operators agree to deploy their masts or other supporting constructions in the same location. Typically, each operator provides its own mast, backhaul, cabinets, and active equipment.

Mast sharing is a form of co-location where two or more operators agree to use the same mast or other supporting construction. Generally, each operator provides its own backhaul, cabinets, and active equipment.

5.2 Active sharing

Active sharing is the common use by two or more operators of active elements of their respective networks. Active elements are those which are able to generate, process, amplify, and control signals. Examples of active elements are very diverse and include many different types of electronic equipment (hardware and software) capable of various functions (transmitters, receivers, amplifiers, decoders etc.). While antennas have been traditionally classified as passive elements, technology advance has led to a paradigm shift to active antenna systems, which are considered a key enabler of 5G networks. Such antennas can also be considered as active when equipped with radio frequency units such as amplifiers and signal processing elements. Furthermore, 5G, including virtualization technology, may enable new forms of network sharing, in particular, for building common network slices tailored to specific services.

RAN sharing is a form of active sharing where two or more operators agree to use the same access network equipment, including base station active equipment and possibly the antenna. Each operator uses its own core network. This type of active sharing itself can typically be split into two types, depending on whether operators share the same spectrum or not:

- Multi-Operator Radio Access Network (MORAN) sharing is a form of RAN sharing where only equipment is shared (i.e., not spectrum). The end-users of each operator access the services of their respective MNO with the frequencies of their respective MNO.
- Multi Operator Core Network (MOCN) sharing is a form of RAN sharing where all elements of the radio access network, including spectrum, are shared. The end-users of each operator can access the services of their respective MNO through all the frequencies that are shared in the access network. The frequencies can be provided by one or several operators that are part of the sharing. When the frequencies of several operators are used, it is called MOCN with frequency (or spectrum) pooling.

National/local roaming is a form of active sharing where one operator uses the mobile service of another operator within the same country for the purpose of providing services to its end users.

6. The CTU's role in mobile network sharing

The CTU's involvement in network sharing may be generally divided into two categories. The CTU, as the ex-ante regulator, may either actively step into the market environment and make network sharing mandatory or, in case the network sharing agreement between operators has been concluded voluntarily on a commercial basis, assess the impact

of such a sharing on market structure and the level of competition. While the potential of the former case has not been fully explored and utilized as of yet, the latter case must have already been applied by the CTU due to the extensive network sharing agreements between the two largest MNOs in the Czech Republic.

7. Mandatory network sharing

In the area of passive network sharing, perhaps the most relevant piece of legislation is represented by the Act. 194/2017 Sb. implementing directive 2014/61/EU on measures to reduce the cost of deploying high-speed electronic communications networks. This act makes it mandatory for network operators¹⁶ to provide access to their physical infrastructure¹⁷ under fair and reasonable terms and conditions, including price, to operators with a view to deploying elements of high-speed electronic communications networks¹⁸. The CTU then acts as the dispute settlement body in case both parties have not reached agreement.

The directive 2018/1972 of the European Parliament and of the Council establishing the European Electronic Communications Code (EECC), whose implementing amendment of the Act 127/2005 Sb. on Electronic communications services is yet to be adopted, provides several provisions making mandatory sharing possible:

- According to Article 47, competent authorities shall attach conditions to individual rights of use of the radio spectrum to ensure optimal and the most effective and efficient use of radio spectrum and promoting coverage. In particular, competent authorities may provide for the following possibilities a) to share passive or active infrastructure which relies on radio spectrum, or radio spectrum, b) to enter into commercial roaming access agreements, and c) to jointly roll-out. Of particular importance here is the effective and efficient use of the spectrum, the promotion of coverage, and the rapid deployment of networks (especially in less densely populated areas). In this regard, competent authorities shall not prevent the sharing of radio spectrum in the conditions attached to the rights of use for the radio spectrum. Implementation by undertakings of conditions attached pursuant to this paragraph shall remain subject to competition law. This instrument may concern passive as well as active sharing.
- According to Article 52 and – if applicable – Article 51, competent authorities shall promote effective competition and avoid distortions of competition in the internal market when deciding to grant, amend, or renew rights of use for radio spectrum. To pursue this objective, competent authorities shall take appropriate measures. For the assessment of the necessity of such measures, competent authorities shall take the approach of market analysis into account. This may also concern infrastructure sharing under the appropriate conditions. For example, roaming might be imposed for entry assistance.
- According to Article 44, competent authorities may impose sharing in order to protect the environment, public health, public

16 Network operator means an undertaking providing or authorised to provide public communications networks as well as an undertaking providing a physical infrastructure intended to provide a) a service of production, transport or distribution of: gas; electricity, including public lighting; heating; water, including disposal or treatment of waste water and sewage, and drainage systems; b) transport services, including railways, roads, ports, and airports.

17 Physical infrastructure means any element of a network which is intended to host other elements of a network without becoming itself an active element of the network, such as pipes, masts, ducts, inspection chambers, manholes, cabinets, buildings or entries to buildings, antenna installations, towers, and poles. On the other hand cables, including dark fibre, as well as elements of networks used for the provision of water intended for human consumption are not physical infrastructure within the meaning of the directive.

18 High-speed electronic communications networks means an electronic communication network which is capable of delivering broadband access services at speeds of at least 30 Mbps.

security, or to meet town- and country- planning objectives if the establishment of the infrastructure was based on rights of way.

- According to Article 61.4, competent authorities will have the power to impose obligations either to share passive infrastructure and or to conclude localised roaming agreements. These obligations would be imposed only under the following conditions: First, passive sharing or localized roaming must be directly necessary for the local provision of services which rely on the use of radio spectrum. Second, no viable and similar alternative means of access to end-users is made available to any undertaking on fair and reasonable terms and conditions. Third, the possibility to impose sharing is clearly provided for when granting the rights of use for radio spectrum. Fourth, market-driven deployment of infrastructure for the provision of networks or services which rely on the use of radio spectrum is subject to insurmountable economic or physical obstacles and therefore access to networks or services by end-users is severely deficient or absent. In those circumstances where access and sharing of passive infrastructure does not suffice to address the situation, sharing of active infrastructure may be imposed. Upon failure of commercial negotiations, competent authorities shall resolve the dispute with a binding decision.

To summarize with BEREC¹⁹, the most important new instruments in the EECC are:

- 1) The EECC introduces new powers to impose passive or even active sharing under exceptional circumstances. For imposing obligations, the EECC clearly indicates that passive sharing is the preferred solution and active sharing or even roaming shall only be relied on if passive sharing does not suffice.
- 2) The EECC enables competent authorities to impose passive sharing based on public interest grounds.
- 3) The EECC imposes strict conditions and requires a detailed assessment before sharing can be imposed on operators.

8. Recent national roaming experience in the Czech Republic

In order to promote competition, both on the wholesale and the retail mobile market and tackle a long-standing issue of high prices, namely of data services, in comparison with other European countries, the CTU incorporated a national roaming obligation into the conditions of a recently organized 700 MHz and 3400–3600 MHz frequency bands auction²⁰. This obligation was to facilitate entry of new network operators and to create conditions to enable subsequent competitiveness of these new network operators on the market. To support this move, the CTU took into account its recent three criteria test²¹ from 2018 as well as its subsequent preliminary analysis²² from 2019, which both evidenced a feeble level of competition on this market.

The national roaming within the auction conditions covered access to the public communications network of potentially all three current MNOs used for the provision of publicly available electronic communications services by means of a) 2G, 3G, and 4G technologies in the entire scope of services (including data, voice, and SMS) and b) 5G technologies in the scope of the internet access service EBB (enhanced broadband) and data services for the provision of equivalent to voice services and SMS in quality not preventing the provision of such

19 BEREC Common Position on Mobile Infrastructure Sharing, BoR(19)110 of 13 June 2019.

20 See the Invitation to Tender for Granting of the Rights to Use Radio Frequencies to Provide Electronic Communications Networks in the 700 MHz and 3400–3600 Frequency Bands from 7 August 2020, <https://www.ctu.cz/sites/default/files/obsah/ctu/oznameni-ceskeho-telekomunikacniho-uradu-o-vyhlaseni-vyberoveho-rizeni-za-ucelem-udeleni-prav-k-obrazky/20200811-invitationtotender.pdf>.

21 The three-criteria test performed by the CTU on the mobile services market see here: <https://www.ctu.cz/sites/default/files/obsah/stranky/223526/soubory/trhmobilnichsluzeb3k-kezverejneniverejnaverze.pdf>.

22 The preliminary analysis of the wholesale mobile market see here: <https://www.ctu.eu/notice-consultation-preliminary-analysis-wholesale-mobile-market>.

services, both with the use of radio frequencies in the frequency bands of 800 MHz, 900 MHz, 1800 MHz, 2100 MHz and/or 2600 MHz. The national roaming obligation is limited in time until 30 June 2029.

The imposition of this obligation into the frequency auction just demonstrates that technically the same behaviour (network sharing) may be assessed both as enhancing competition and hampering competition depending on its scope, intensity, and market conditions.

9. Voluntary network sharing

So far, major mobile network sharing agreements throughout Europe have been concluded on a commercial basis by MNOs motivated by gains from such a sharing described above, among others, namely, by cost savings. This was also the case of several network sharing agreements between T-Mobile Czech Republic a.s. and O2 Czech Republic a.s.²³ concluded for 2G, 3G, and 4G networks.

In case of such a voluntarily agreement, the CTU as the ex-ante regulator is not the first line authority to step in and assess compliance with legal requirements and impact on competitive environment. It is a competition authority's responsibility to analyse whether the agreement is in line with competition law and does not fall into a category of prohibited agreements.

The CTU ex-ante competences are delineated by the European regulatory framework and by the Act 127/2005 Sb., on Electronic Communications. The possibility to intervene in the market conditions are rather strictly limited and always should be duly justified.

A standard and safe playground for ex-ante regulators activity in the EU is set by the European Commission in its recommendation on relevant markets²⁴. Whenever an NRA strives to enlarge this playground and impose regulation on a market not listed in the European Commission's recommendation, it needs to establish and define such a market as susceptible to ex-ante regulation in a rigorous three-criteria²⁵ test which consists of these points:

- High and non-transitory structural, legal or regulatory barriers to entry are present;
- There is a market structure which does not tend towards effective competition within the relevant time horizon, having regard to the state of infrastructure-based competition and other sources of competition behind the barriers to entry; and
- Competition law alone is insufficient to adequately address the identified market failure(s)

Only after these criteria are cumulatively fulfilled, may the NRA carry out an analysis of such a market and, depending on its result, impose some kind of regulation.

A mobile network sharing agreement would be typically concluded between two (or more) mobile network operators in an oligopoly mobile market. This kind of market in Europe usually includes several (3–4) strong mobile network operators holding if not the whole market share then at least the vast majority of it. It implies that potential significant market power, if present at all, would not concentrate under one market player but would be enjoyed by a couple of them under the concept of joint SMP. This brings us precisely to the tool where a network sharing agreement could be assessed and taken into account by the CTU. But, then again, another set of high hurdles needs to be cleared before such a joint SMP may be found to be present on the market. Joint SMP is

standardly assessed with the Airtours criteria²⁶ for tacit collusion and consists of these points:

- Focal point as the point upon which market participants may coordinate their competitive behaviour;
- Transparency as a condition which enables to detect other participants behaviour;
- Retaliatory measures which allow to punish those participants of the tacit collusion which would deviate from the coordinated behaviour; and
- Non-colluding operators are not able to jeopardize coordinated behaviour of members of tacit collusion.

The three-criteria test and joint SMP would be the most likely tools employed by the CTU to assess a mobile network sharing agreement. Even though mobile network sharing agreements may have the potential to impact the outcome of the Airtours criteria, they may be carefully designed as to avoid any such conclusion from an NRA. This was also the result of the CTU's opinion²⁷ from 2015 on a 2G, 3G, and 4G mobile network sharing agreement between T-Mobile Czech Republic a.s. and O2 Czech Republic a.s. which did not identify any detrimental effect on the competitive environment on the retail mobile market in a short-to-medium-term.

10. Conclusions

The fifth generation of mobile networks that are about to be used for the provision of services in the Czech mobile market will be investment intensive with increased requirement on a number of frequencies transmitters and a number of sites. This makes this network even more prone to sharing than the previous mobile network generations. The main commercial motivation of MNOs to share networks is represented by cost savings while regulators may prioritize one of the general public interests (the environmental or health protection aspects) when imposing network sharing as obligation on market players. It implies that ex-ante regulators' approach to mobile network sharing is not negative by default and they may even promote network sharing in many instances as could be demonstrated also by national roaming obligation incorporated into the latest frequencies auction organized by the CTU in the second half of 2020.

In case of network sharing agreements concluded by MNOs on a commercial basis, the CTU as the ex-ante regulator is not the first line authority to step in and carry out an assessment of an agreement's compliance with legal requirements as this privilege belongs to competition authority. Yet, there are tools at the CTU's disposal that can be used to make sure the network sharing does not result in a significant market power of participating operators to the detriment of end-users.

23 Rights and duties stemming from these network sharing agreements were passed on CETIN a.s. in 2015 when it separated from its now sister company O2 Czech Republic a.s.

24 The recommendation 2014/710/EU from 2014 defines only 5 relevant markets and only one of them is a mobile market including wholesale voice call termination on individual mobile networks. The upcoming recommendation to be issued at the end of 2020 will further reduce this number to only two wholesale markets with services provided at a fixed location.

25 These conditions, previously standard part of relevant market recommendations, were recently incorporated into article 67 of directive 2018/1972, which so far has not been fully implemented in the Czech Republic.

26 These were set by the Court of First Instance (now the General Court) in 2002 in Case T-342/1999, *Airtours v. Commission*.

27 This opinion of the CTU from 2015 may be found here: <https://www.ctu.cz/stanovisko-ceskeho-telekomunikacniho-uradu-ke-sdileni-siti-2g-3g-4g-pro-ucely-komplexniho>.

Sharing – benefit or cartel

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Abstract Today, the issue of resource sharing is very topical. This is no different in the case of the sharing of telecommunications networks. A large number of questions arise here, which are a new challenge for both legal and economic sciences.

The article entitled Sharing - benefit or cartel focuses on aspects of sharing from the point of view of competition law. If we are to come to specific conclusions, it is necessary to proceed from the definition of terms that are important for describing sharing as a new competitive phenomenon. Therefore, the first part of the paper is devoted to the definitions of terms such as, competition, sharing, prohibited agreement, dominant position, advantage, and more. The paper pays attention not only to the definition of terms from the point of view of the Czech legal framework, but also from the level of European law.

In the section dealing with benefit issues, a comparative method is used between the benefits and the possible negative effect between the entities that have agreed to share it themselves, but for the final customers. Here, benefit is viewed from the perspective of competition law. The network sharing agreement itself, in addition to the benefit, is also an equally important role. The next part of this contribution is devoted to situations when it is already a prohibited agreement and when it is possible to say that it is a rightful holiday agreement. Keep in mind that in the case of network sharing, there are always two public interests in a competitive relationship. It is the public interest in efficient network sharing on the one hand and the public interest in fair competition on the other. Finding the line between what is allowed and what is forbidden is not always easy. In this case, there may be different views of individual regulators, the sectoral regulator in the field of telecommunications on the one hand and the competition authority on the other, who represent the above-mentioned public interests. It is clear that network sharing reduces costs, both on the part of cooperating competitors and on the part of consumers. It should not be at the expense of competition. The assessment of whether or not cost reductions are anti-competitive or not is always dependent on the specific case of sharing.

We should keep in mind that the aim of sharing should always be greater efficiency, which should not outweigh the possible negative impact on competition. Inefficient sharing is undesirable and cannot be considered appropriate sharing. Indeed, if sharing is improperly or incorrectly used, it may or should not have anti-competitive effects. The use of a proportionality test of the effects of self-sharing should be essential for the assessment of any sharing. It must be emphasized that good anti-competitive sharing is desirable. Assessing whether it is a good or inappropriate sharing should be predictable. Regulators' opinions on and attitudes towards sharing should be clear and sustainable in the long term.

Key words Sharing, Prohibited agreement (cartel), Benefit, State aid, Competition, Proportionality test

Today, sharing is a very widely used term and each of us may perceive it differently. An economist will certainly have a different view than a lawyer. The term "sharing" has not yet had a well-established definition of law, as is the case with other legal terms of competition law. What guidelines can help us to apply this concept in practice? How to deal with the concept of sharing in the telecommunications sector? What are the advantages or disadvantages of using a shared option, resource, network, or service? Do we have the opportunity to build on the practical experience of competitors or regulators? These all are the questions we have to ask ourselves.

Why do we even address the issues of sharing with an impact on competition protection? The answer is simple. Sharing "anything" leads to coordination, a common approach of those who have so far acted for themselves. Sharing, by its very nature, leads to lower resource requirements. Thus, it also leads to higher efficiency and higher profit margins. In the context of this answer, we should ask other questions: Where is the line between the so-called good and bad sharing? What are the boundaries between an agreement and a prohibited agreement, i.e. cartel? Should profit be only on the part of those entities who share it?

It follows from the above that sharing, not only in the field of telecommunications, cannot be described simply. The following text should help clarify what it may be perceived as "good" sharing and what we may perceive it as "bad" sharing.

Definitions

From the point of view of legal theory and the perception of law as such, it is necessary to proceed from legally defined concepts. Only in this way is it possible to determine the degree of possible breach of the legal framework and to define the boundaries between lawfully acceptable and unacceptable conduct. In order to be able to identify the boundaries

between the benefit and a possible prohibited agreement, it is necessary to clarify the following concepts.

As mentioned above, one of the basic concepts should be the definition of "sharing" as a legal concept. In the currently valid legal order of the Czech Republic, the legal definition of sharing is not stated, but in the prepared amendment to the Act on Electronic Communications No. 127/2005 Sb., as amended, the definition of spectrum sharing is stated within § 2 in a new provision of paragraph 2) letter (k) as follows: "Shared use of radio spectrum means access by two or more entities to use the same frequency bands:

1) *under a specified sharing mechanism determined on the basis of a general authorization, radio frequency allocation or individual authorization to use radio frequencies, or a combination thereof, including regulatory approaches such as sharing access to radio frequencies to facilitate shared use of a frequency band, or*

2) *by agreement of the stakeholders in accordance with the sharing rules set out in the general authorization, the individual authorization to use radio frequencies or the allocation of radio frequencies, in order to ensure for all entities: predictable and reliable sharing mechanisms and without prejudice to competition law,"*¹

For our purpose, it is important to note all three elements of this definition. First, sharing is only possible on the basis of a general authorization that should be granted by the sectoral regulator. Secondly, a dispositive list of possible ways of the "good" sharing is provided and, thirdly, that the sharing must be

¹ The text of the newly amended § 2 must be taken with some reserve, as the final text of the draft law may be amended or changed, or it is possible that, given the current state of discussion of the amendment to the law in question, it may not be adopted at all.

predictable, reliable and in itself should not infringe competition law.² Another concept to start with is the **concept of competition**. This concept is not defined, unlike previous terms, in the Czech legal system.³ Unlike the concept of sharing, however, it is sufficiently derived from the administrative practices not only national competition authorities, but of the administrative practices of the European Union.⁴ In other words, we know what we can imagine under the term competition. We can conclude that competition can be found: "where two or more competitors compete with each other within the relevant market, in order to achieve the highest possible efficiency, profit or other appreciation within compliance with legally foreseeable limits."⁵

Another concept that needs to be clarified is the concept of a prohibited agreement, namely a cartel. The legal definition of a prohibited agreement in the Czech legal system can be found in the provision of § 3 par. 1) of Act no. No. 143/2001 Sb.: "... agreements between competitors, decisions of their associations and actions of competitors in mutual agreement, the aim or result of which is the distortion of competition."⁶ Agreements can then be divided horizontally and vertically.⁷ Apart from the national regulation, the definition of prohibited agreements in Article 101 of the Treaty on the Functioning is a part of the Czech legal system

Europe Union⁸, : "All agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the elimination, restriction or distortion of competition are incompatible with the internal market". As seen from the above text, the common nominator of a prohibited agreement under both Czech law and European law is an agreement that distorts or threatens competition. Thus, not every agreement, including a network or spectrum sharing agreement, is prohibited.⁹

One of the possible guidelines for perceiving the definition of

- 2 Whether and under what circumstances the matter may occur will be explained later in the text.
- 3 "Competition as such is nowhere precisely defined by law. However, it can be understood as a simultaneous effort of entities in the market of a certain type of services or goods, where the aim of these entities is to achieve certain advantages over other entities. These benefits can be of various natures, most often falling into the area of economic benefits or results. The benefits obtained then affect their economic activity." https://wiki.iurium.cz/w/Hospod%C3%A1%C5%99sk%C3%A1_sout%C4%9B%C5%BE.
- 4 "The aim of EU competition rules is to ensure the proper functioning of the internal market. Effective competition allows businesses to compete on equal terms in all Member States, but at the same time puts pressure on them to constantly strive to offer consumers the best possible products at the best possible prices. This in turn drives innovation and long-term economic growth. Competition is therefore a key tool for creating a free and dynamic internal market and increasing general economic prosperity. EU competition policy also applies to non-EU companies operating in the internal market." <https://www.europarl.europa.eu/factsheets/en/sheet/82/politika-hospodarske-souteze>.
- 5 Legal terms such as the relevant market or competitor are defined by Act no. No. 143/2001 Sb., on the protection of competition, as amended in § 2.
- 6 In order for an agreement to fall within the prohibition laid down in Section 3 (1) of the Act, it must have as its object or effect the distortion of competition. According to settled case-law, the alternative nature of that condition, indicated by the conjunction 'or', makes it possible to assess the very purpose of the agreement in the light of the economic context. If an analysis of the disputed provision of a particular agreement does not indicate that it is a provision which sufficiently distorts the competitive environment, it is still desirable to examine the actual effects of that agreement. In order for an agreement to be prohibited, there must be evidence that competition has been significantly impeded.
- 7 See. provisions of § 5 of Act. No. 143/2001 Sb., on the protection of competition, as amended.
- 8 See. Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community (2007 / C 306/01).
- 9 E.g. Case C-226/11 of 13 December 2012 Expedia "An agreement which may affect trade between Member States and which has as its object the elimination, restriction or distortion of competition in the internal market is, by its nature and effect, capable of appreciably restricting competition."

the concept of sharing can be the different forms of the so-called "soft law". Here, however, we cannot find a definition as such, but only a description or assignment of certain criteria for perceiving the concept of sharing as such.¹⁰

In addition to the very general concept of sharing, it is necessary to address other concepts related to it, and thus the concepts of the so-called active and passive sharing.

Active Sharing Agreement: "Concerning the sharing of active mobile network equipment between the Parties. For example, network spectrum."¹¹

Passive Sharing Agreement: "This is the sharing of passive infrastructure elements, for example, website sharing or passive mobile network equipment between the parties to the agreement."¹² Passive sharing in the field of telecommunications can be described as passively sharing elements of the network infrastructure that play a supporting role (locations, masts, roofs, optical links, power supplies, air conditioning, containers, etc.).

As with the definition of our own notion of general sharing, we do not have a legal definition for the notions of active and passive sharing. We have to rely again on the description or

comments from the sectoral regulator in the field of telecommunications or competition authorities through soft law.¹³

In addition to the above concepts, it is necessary to clarify the concept of a competitor. In § 2 paragraph 1) of the Czech Act. No. 143/2001 Sb., the term competitor is defined as: "Competitor under this Act means natural and legal persons, their associations, associations of these associations and other forms of grouping, even if these associations and groupings are not legal persons, if they are involved in competition or may be affected by their activities, even if they are not entrepreneurs." When looking at sharing from the perspective of competition law, we must always keep in mind that sharing may include all possible entities that carry out an economic activity within a specific relevant market.

In addition to the notion of a prohibited agreement or cartel, there is also the notion of price tracking. Although there is no legally defined definition, it can be described as follows. "In some highly transparent markets, competitors can easily and quickly monitor price movements and protect competition." Competitors operating in these areas usually only follow the so-called price leader "and its prices are decisive for their further pricing policy. The same price level is not the result of cartel coordination, but only the analysis and monitoring of prices in a particular relevant market. Typical examples are retail markets for the sale of fuels or foodstuffs." Price monitoring may in certain circumstances be confused with a prohibited agreement, but one of the essential characteristics, and thus

- 10 For example: Opinion of the Czech Telecommunication Office on the sharing of 2G, 3G and 4G networks. "Network sharing has become commonplace in recent years across the Member States of the European Union. From a technical point of view, there can be a number of different forms of mutual access to infrastructure and network capacity, from less intensive forms, such as passive infrastructure sharing, to more competitive-risk forms of infrastructure sharing, such as frequency sharing. National roaming agreements that have been concluded in several EU Member States (for example, Austria, Germany or France) can also be considered network sharing." <https://www.ctu.cz/stanovisko-ceskeho-telekomunikacniho-uradu-ke-sdileni-siti-2g-3g-4g-pro-ucely-komplexniho>.
- 11 "Active sharing in telecommunications can be described as the active sharing of network elements involved in the transmission of a radio signal (transmitters, receivers, base station antennas (BTS, Node B, e Node B), radio network controllers (RNCs), etc." See the Opinion of the Czech Telecommunication Office on the sharing of 2G, 3G and 4G networks.
- 12 "Passive sharing in the field of telecommunications can be described as passively sharing elements of the network infrastructure that play a supporting role (locations, masts, roofs, optical links, power supplies, air conditioning, containers, etc.)." 2G, 3G and 4G <https://www.ctu.cz/stanovisko-ceskeho-telekomunikacniho-uradu-ke-sdileni-siti-2g-3g-4g-pro-ucely-komplexniho>.
- 13 E.g., Mobile Operators Association "Code of best practice" for the development of the mobile market in the UK. <https://www.mobilemastinfo.com/network-sharing-and-consolidation/>.

mutual coordination, which has as its object or effect the distortion of competition, is lacking.¹⁴

When we talk about sharing in the telecommunications sector, we cannot omit the legal definition of a dominant position. It is clear that in cases of network sharing, there may be situations where cooperating competitors may merge, thus establishing joint dominance, or they may strengthen the already significant position of one of the competitors in a particular relevant market.¹⁵ As in the case of the definition of prohibited agreements, the definition of a dominant position and its possible abuse are regulated in both national and European law. The definition under Czech law is as follows: “A dominant position on the market is held by a competitor or jointly by several competitors (joint dominance), which allows them, thanks to their market power, to behave largely independently of other competitors or consumers¹⁶.” European law defines dominance as follows: “Within the internal market it is incompatible and therefore prohibited, in so far as it may affect trade between Member States, for one or more undertakings to abuse a dominant position within the internal market or in a substantial part of it.”¹⁷

It is also appropriate to define what is meant by an (anti-competitive) agreement. Consensus: “This is a situation where individual competitors inform each other in advance, directly or indirectly, of their future steps in the market, which allows each of them to adjust their competitive behavior with the knowledge that their competitor is likely to behave in the same way.”

It is clear from the definition that an agreement within the meaning of competition law always means an agreement that may jeopardize or violate the conditions set for effective competition laid down by competition law. “It is always necessary to examine whether or not the agreement has an anti-competitive object. It is always desirable to examine the effects of a particular agreement on the relevant market. If the agreement is to be classified as prohibited, there must be evidence that competition has been significantly impeded, eliminated or restricted.”¹⁸

Benefits

The goal of competitors who jointly share certain resources on a particular relevant market is to achieve a certain advantage, benefit or appreciation. Advantage as such is one of the factors affecting competition. We can then perceive the advantage from two angles. First, whether such advantage can be seen as one of the essential features of public support and, second, whether this advantage affects competition itself, either positively or negatively.

In the case of sharing telecommunications networks, public support may be in the form of conclusion of an agreement on access to the

public communications network via national roaming.¹⁹ The contract is usually concluded between an existing operator, which provides for a predetermined price declared in the reference offer, and a new entrant.²⁰ In this case, national roaming is an advantage offered to a new entrant to the telecommunications market, so that it can provide a whole range of telecommunications services to its future customers for a certain, pre-declared period. The advantage may be seen for the new entrant, which can build its network in a pre-determined manner, and at the same time it may compete with all competitors in the relevant market. Public aid itself is unlawful if four basic conditions are met: a) an advantage, b) public resources, c) a distortion of trade between Member States, and d) a distortion or threat to competition. In case of national roaming, unless provided in a selective or overly favorable manner, the benefiting party is an operator, by offsetting the disadvantage of entering a particular relevant market by a new entrant. In most cases, national roaming conditions pursue the goal of reducing prices for end customers.²¹

If we look at the question of advantage in the implementation of competition law in case of sharing in the field of telecommunications networks, we can in theory divide the question of benefits into two subgroups. The first is the benefit, advantage, appreciation for the cooperating competitors. The second is a benefit for the consumers.²²

Cooperating competitors achieve the following benefits by sharing:

- a) lower costs for provided services,
- b) reduction of operating costs,
- c) reduction of investment costs.

Consumers can achieve the following benefits through network sharing:

- a) lower price of services,
- b) higher quality,
- c) sustainability.

If we look at the advantage from the point of view of competition law, we should test the advantage with a proportionality test. The proportionality test includes:

19 “National roaming for the purposes of this commitment means access to the public communications network operated by the Allocation Holder covered by this commitment, used to provide publicly available electronic communications services through (i) 2G, 3G and 4G technologies in the full range of services (incl. data, voice, SMS), and (ii) 5G technologies within the scope of EBB (enhanced broadband) Internet access services and data services to provide equivalent voice and SMS services in a quality that does not prevent the provision of such services, both using radio frequencies in the bands 800 MHz, 900 MHz, 1800 MHz, 2100 MHz and / or 2600 MHz.” <https://www.ctu.cz/sites/default/files/obsah/ctu/oznameni-ceskeho-telekomunikacniho-uradu-o-vyhlaseni-vyberoveho-rizeni-za-ucelem-udeleni-prav-k-obrazky/20200807-vyhlasenicz.pdf>.

20 The scope of services and conditions of the contract are always individual, whether it is certain networking tips or options.

21 “Providers of publicly available number-based interpersonal communications services should be able to propose to their consumers alternative tariff offers for international communications with different rates for regulated communications within the Union and consumers should be able to explicitly choose such offers and switch back at any time and free of charge, and this also applies to offers that consumers have subscribed to before the entry into force of such provisions.” Regulation 2018/1971 of the European Parliament of the Council establishing the Body of European Regulators for Electronic Communications (BEREC) and the BEREC Support Agency (BEREC Office), amending Regulation (EU) 2015/2120 and repealing Regulation (EC) No 1211 / 2009.

22 “In addition, high prices for communication within the Union constitute an obstacle to the functioning of the internal market as they discourage the search for and purchase of goods and services from a provider located in another Member State. It is therefore necessary to set specific and proportionate limits on the price that providers of publicly available number-based interpersonal communication services may charge consumers for communication within the Union, in order to eliminate those high prices.” Regulation 2018/1971 of the European Parliament of the Council establishing the Body of European Regulators for Electronic Communications (BEREC) and the BEREC Support Agency (BEREC Office), amending Regulation (EU) 2015/2120 and repealing Regulation (EC) No 1211 / 2009.

14 See. <https://www.uohs.cz/cs/slovnicek-pojmu.html>.

15 The assessment of the situation must always be approached on a case-by-case basis.

16 See. § 10 paragraph 1) of Act. No. 143/2001 Sb., on the protection of competition, Article 102 of the Treaty on the Functioning of the EU.

17 “Dominant position” means the position of an undertaking with such economic power as to prevent it from maintaining effective competition in the relevant market by enabling it to act to a large extent independently of its competitors, its customers. Dominant position shall be assessed in relation to the whole or at least a substantial part of the internal market. How much of the market is assessed depends on the nature of the product, the availability of alternative products, consumer behavior and their willingness to switch to alternative products. A dominant position is not in itself an infringement of EU competition law and holders of such a position can compete on the basis of their merits, just like any other company. However, a dominant position gives the company a special responsibility to ensure that its behavior does not disrupt its competition. This means that if the same conduct were committed by a non-dominant undertaking, it would not necessarily be illegal. Examples of conduct that would constitute an abuse of a dominant position include setting prices below cost, charging disproportionate prices, tying and pooling products, and refusing to deal with certain counterparts. Article 102 TFEU provides several examples of abuse for guidance.” <https://www.europarl.europa.eu/factsheets/en/sheet/82/economic-competition-policy>.

18 See. Judgment of the Court of First Instance T-328/03 in O2 (Germany) GmbH & Co, OHG v EC Commission.

- (a) the suitability criterion,
- (b) the criterion of necessity,
- (c) the criterion of comparison.

When examining the criterion of appropriateness, the assessment will be whether or not a particular network sharing advantage has a negative effect on competition. If the aim, in the public interest, is to share, to achieve a reduction in the demands on the use of resources as such, it is necessary to achieve this goal while respecting compliance with economic rules, i.e. while respecting other public interests. When examining the criterion of necessity, we should consider whether the set "goals" could not be achieved by other means. That is, whether the benefits, for example, on the efficiency side can be achieved only through sharing or even without it, e.g. by using technological innovation. The last necessary criterion is the criterion of comparing the higher gravity in the conflict of public interests. This assessment should be based on values, systemic, and contextual considerations arguments. In other words, whether the negative effects of sharing are offset by more effective competition.

In order not to distort or jeopardize competition itself, the advantages of cooperating competitors should always be balanced by the advantages for final consumers. That is, higher efficiency should not only be reflected in the higher margin of the cooperating parties, but should also lead to a lower price of the final product for the customers of both sharing parties or a wider offer.

Any sharing should not be to the detriment of competition with each other or even reduce the willingness to innovate or develop one's own networks. The aim of sharing should not be to restrict competition, but to increase efficiency, and the cooperating parties should share the fruits of their efficiency with their customers. However, the benefits for the customers should not be at the expense of cost-effectiveness or a reasonable profit from self-sharing.

Prohibited agreement

A prohibited agreement is not an agreement which has a negligible effect on competition. Agreements have a negligible impact in the sense of § 3 paragraph 1 of Czech Act No. 143/2001 Sb., only if their aim is not to distort competition. In addition, the following cumulative conditions must be met:

- (1) The combined share of competitors that are parties to a horizontal agreement shall not exceed 10% in any relevant market affected by that agreement.
- (2) The share of any of the competitors participating in the vertical agreement does not exceed 15% in any relevant market affected by this agreement.²³

The reason for distinguishing between an agreement and an outcome agreement is based on the fact that certain forms of agreements between competitors may be considered to be significantly detrimental to the proper functioning of normal competition by their very nature, irrespective of an examination of their actual impact. In assessing whether an agreement has as its object the distortion of competition, a number of factors must be examined, in particular (1) the content of its provisions, (2) the objectives which it seeks to achieve, and (3) the economic and legal context in which it is concluded.

When can we perceive that sharing shows signs of cartel behaviour? This will always be the case if the public interest in the effective functioning of competition is jeopardized or distorted through sharing. It should be noted that in order to find that there is a prohibited agreement, a case-by-case basis approach is absolutely necessary as well as an individual assessment for a specific territorially defined relevant market, taking into account all economic and legal circumstances.

We can talk about a cartel if the sharing takes place between the strongest competitors in a specific regionally defined relevant market. Such sharing should subsequently significantly affect the behavior of

23 These principles are also reflected in the Communication on agreements of minor importance which do not appreciably restrict competition under Article 101 (1) of the Treaty on the Functioning of the European Union, 2014 / C 291/01.

other competitors in the market. It is not decisive how long such an influence lasts.

It is possible to speak of a prohibited agreement even if the only goal of strengthening is exclusively higher profit at the expense of competition. Sharing should also not result in less effective competition leading to the same or lower quality of services provided.

There may be a prohibited agreement even if there are no objective reasons justifying the conduct of the cooperating competitors.

When can network sharing not be considered a prohibited agreement?

First of all, when sharing does not occur between the strongest competitors in a particular regionally defined relevant market and does not significantly affect the behavior of other competitors in that market.

Furthermore, we can say that it will not be a prohibited agreement if the goal of sharing is a higher profit for the final consumer. This can be reflected both in the price of the service provided and in a higher range of services themselves. In addition, the result or aim of network sharing should not be to restrict, jeopardize or distort competition. The result of sharing should be higher quality and efficiency of provided services. The sharing agreement itself should also motivate cooperating competitors to introduce innovations and new investments.

Conclusion

As mentioned above, whether or not particular network sharing is perceived as a prohibited agreement always depends on the specific circumstances.²⁴ The assessment should be made in the context of both the substantive and procedural instruments of competition law.

It is obvious that network sharing reduces costs, both on the part of cooperating competitors and on the part of consumers. It should not be at the expense of competition. The assessment of whether or not cost reductions are anti-competitive always depends on the specific assessment of a particular sharing.

Sharing should always be effective and these efficiencies should outweigh the potential impact on competition. Inefficient sharing is undesirable and cannot be considered appropriate sharing.

If sharing is properly or correctly used, it may not or should not have anti-competitive effects.

Anyone considering sharing should use a proportionality test using the criteria of suitability, necessity, and comparison.

It must be emphasized that "good" and pro-competitive sharing is desirable. Assessing whether it is a "good" or inappropriate sharing should be predictable. Regulators' opinions and attitudes towards sharing should remain clear and sustainable in the long term.

If the sharing shows the characteristics of a prohibited agreement, this may be affected by the remedies of competition law.

24 "Network sharing by operators is generally to the benefit of the consumer, as it means faster network development, cost savings and coverage of rural areas. However, if there are indications that cooperation agreements may harm consumers, it is our duty to investigate them and ensure that there is real competition in the market. In this case, we fear that the network sharing agreement between the two largest operators in the Czech Republic is restricting competition in more densely populated parts of the country." https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5110.



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31 LET NA TRHU

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VE 3 POBOČKÁCH

3 KRÁT VYHLÁŠENÍ PRÁVNICKOU
FIRMOU ROKU V ČR PRO OBLAST
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5,6 MLD. KČ HODNOTA AUKCE FREKVENCÍ
PRO 5G SÍŤ, KE KTERÉ JSME KLIENTŮM
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State Aid in Network Development and its Consequences for Network Sharing

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ROWAN LEGAL

Abstract Electronic communications markets in Europe are undergoing significant changes. Widespread connectivity and high-speed networks are increasingly important for the European economy, which is reflected in the EU policies for a Digital Single Market. Achieving connectivity and coverage goals set by the EU policies require significant investments in the corresponding technology, most prominently 5G networks. This raises the question of whether the investment should be made entirely by private entities, or whether the Member States should step up and grant aid for the network development. The new harmonised framework for electronic communications in Europe, established by the European Electronic Communications Code, clearly states a preference for private investments and emphasises the leading role of the market. In this paper, we present an argument for the market-driven network development, and introduce several possible solutions, such as network sharing and wholesale network access.

Key words Network Sharing, State Aid, Broadband, 5G networks, General Block Exemption Regulation

1. Introduction

In this article, the authors introduce the issue of network development and network sharing in the context of the EU state aid rules and regulatory practice.

This issue arises, in particular, in connection to new technologies such as fifth generation (5G) networks, where both network sharing and state aid can be expected due to the high costs connected with deployment of such technologies. The authors argue that while a legal framework enables providing state aid for the purpose of network development, it is important to remember that market-based solutions, such as commercial network sharing, are always preferable.

Following the introduction to the legal framework, this article deals with a summary of the regulatory approach to state aid and network sharing with a focus on its limits, and subsequently, it briefly comments on market-based alternatives to state aid in network development.

2. Legal Framework for State Aid in Network Development

Legal framework for network development

The most important piece of legislation in this area at the EU level is currently the **European Electronic Communications Code**¹ (EECC) which establishes a harmonised framework for the regulation of electronic communications networks, electronic communications services, associated facilities and associated services, and certain aspects of terminal equipment. It also lays down tasks of national regulatory authorities and, where applicable, of other competent authorities, and establishes a set of procedures to ensure the harmonised application of the regulatory framework throughout the EU.

The main aim of the EECC for network development is to implement an internal market in electronic communications networks and services that results in the deployment and take-up of very high capacity networks (both mobile and fixed), sustainable competition, interoperability of electronic communications services, accessibility, security of networks and services, and end-user benefits. The EECC intends to create a legal framework that would encourage private investments to meet its connectivity goals. Private investments also seem to be best suited to meet another stated EECC objective, which

is economic sustainability of services in a given area.² As such, ex-ante state regulatory interventions in telecoms should be gradually removed and replaced by competition law, and state interventions should be used only if competition is not efficient.³ That also applies to the use of public funding and other financial instruments.

The EECC is intended to contribute to achieving the connectivity ambitions set out in the Commission's policy statement - **Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society (Gigabit Society Communication)**⁴.

The Gigabit Society Communication, among other things, sets out targets for telecommunications network deployment by 2025 which include the following:

- All households should have access to internet connectivity of at least 100 Mbps download upgradable to 1 Gbps;
- Socio-economic drivers such as schools, transport hubs and main providers of public services as well as digitally intensive enterprises should have access to internet connectivity with download and upload speeds of 1 Gbps; and
- Uninterrupted 5G coverage for all urban areas and major terrestrial transport paths should be ensured.

The EECC is further complemented by **5G for Europe: An Action Plan (5G Action Plan)**.⁵ The 5G Action Plan leverages the regulatory framework set out mainly by the EECC through a set of targeted actions which draw on multiple consultations, events with stakeholders, a targeted survey, several studies, industry consultations, and early results from the 5G-PPP. It presents an action plan for a timely and coordinated deployment of 5G networks in Europe through a partnership between the Commission, Member States, and industry.

² Recital 23 of the EECC.

³ Recitals 29 and 229 of the EECC.

⁴ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 14 September 2016, Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society (COM/2016/0587 final). [Online]. Available from : <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52016DC0587>.

⁵ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 14 September 2016, 5G for Europe: An Action Plan (COM/2016/0588 final). [Online]. Available from: <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52016DC0588>.

¹ Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code. [Online]. Available from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018L1972>.

Legal framework for state aid

The basis of the legal framework for state aid regulation in the European Union is formed by Articles 107 and 108 of the **Treaty on the Functioning of the European Union (TFEU)**.⁶ The former sets out the general rule that state aid which distorts or threatens to distort competition is incompatible with the internal market, unless exemptions apply; the latter lays down the framework for the state aid assessment by the Commission.

There are exemptions from Articles 107 and 108 TFEU that are related to network development.

The most important one⁷ is detailed by the **General Block Exemption Regulation (GBER)**.⁸ In the GBER, Section 10, Article 52 sets out conditions under which the state aid for broadband infrastructures is compatible with internal market pursuant to Article 107(3) TFEU and is exempted from the notification requirement of Article 108(3) TFEU.

Further specification of rules for state aid regarding broadband networks can be found in the EU **Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks (Guidelines for State Aid)**.⁹

The overview of regulation provided above is by no means exhaustive – in specific cases other regulations might apply, for instance when using European funds to grant state aid.¹⁰ Given the scope of this article, such other regulations will not be discussed further.

Evaluation of existing state aid rules

Due to the rapidly changing technological development and corresponding adjustments of EU strategic objectives, the existing framework for state aid in network deployment is undergoing evaluation. A public consultation called “**Broadband network deployment – evaluation of EU state aid rules**” started on the 8 September 2020 and was open until the 5 January 2021.¹¹

The aim of the consultation is to gather input from a broad range of respondents (such as industry representatives, public authorities,

consultancy and law firms, members of academia) to evaluate effectiveness and relevance of the existing rules, and consider whether any further action (both legislative and non-legislative) might be necessary.

3. Regulatory Approach to State Aid

The legislation that enables the provision of state aid for network development sets strict requirements that must be met.

The compatibility of state aid and exemption from the notification obligation under Article 52 of the GBER applies only if:

- a) The investment is located in areas where there is no infrastructure of the same category (basic broadband network or next generation access network), and where no such infrastructure is likely to be developed on commercial terms within three years from the moment of publication of the planned aid measure, which shall also be verified through an open public consultation;¹²
- b) The aid is allocated on the basis of an open, transparent, and non-discriminatory competitive selection process respecting the principle of technology neutrality;¹³
- c) The network operator offers the widest possible active and passive wholesale access, according to Article 2(139) of the GBER, under fair and non-discriminatory conditions, including physical unbundling in the case of NGA networks (such wholesale access shall be granted for at least seven years and the right of access to ducts or poles shall not be limited in time; in the case of aid for the construction of ducts, the ducts shall be large enough to cater for several cable networks and different network topologies);¹⁴
- d) The wholesale access price shall be based on the pricing principles set by the national regulatory authority and on benchmarks that prevail in other comparable, more competitive areas of the Member State or the Union taking into account the aid received by the network operator. The national regulatory authority shall be consulted on access conditions, including pricing, and in the event of dispute between access seekers and the subsidised infrastructure operator;¹⁵ and
- e) Member States shall put in place a monitoring and claw-back mechanism if the amount of aid granted to the project exceeds EUR 10 million.¹⁶

Apart from these network development-specific requirements, requirements set out in Chapter I of the GBER must also be met for the state aid to fall under the exemption. These include notification thresholds, transparency requirements, incentive effect requirement, publication requirements etc.

Even if the measure in question cannot benefit from the block exemption under GBER, it can be considered compatible with the internal market following the assessment under Article 107(3) TFEU. The procedure for applying state aid rules and such assessment in the specific context of network deployment are further developed in the Guidelines for State Aid. The criteria for assessing applicability under Article 52 of the GBER and criteria for the assessment of compatibility with Article 107(3) TFEU for network deployment bear many similarities, as shown below.¹⁷

To ensure compatibility with the internal market, the state aid measures must meet **all** the following criteria:¹⁸

12 Article 52(3) GBER.

13 Article 52(4) GBER.

14 Article 52(5) GBER.

15 Article 52(6) GBER.

16 Article 52(7) GBER.

17 Guidelines for State Aid were adopted before the current GBER which expressly provides a block exemption for broadband infrastructure; the previous General Block Exemption Regulation of 2008 did not expressly mention network development activities.

18 Paragraph 33 of the Guidelines for State Aid.

6 Consolidated version of the Treaty on the Functioning of the European Union (2012/C 326/01). [Online]. Available from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12012E/TXT>.

7 Some other exemptions include *de minimis* exemption (i.e., not exceeding EUR 200,000 over the period of three years for the same eligible costs and beneficiary), projects falling within the Guidelines on regional State aid and projects falling within the definition of services of general economic interest.

8 Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty [Online]. Available from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2014.187.01.0001.01.ENG.

9 Communication from the Commission — EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks of 26 January 2013 (2013/C 25/01). [Online]. Available from [https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:52013XC0126\(01\)](https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:52013XC0126(01)).

10 In relation to network development, two funds in particular might be used: the European Regional Development Fund (**ERDF**) and the European Agricultural Fund for Rural Development (**EAFRD**). The former states as its investment priority no. 2 *enhancing access to, and use and quality of, ICT by extending broadband deployment and the roll-out of high-speed networks and supporting the adoption of emerging technologies and networks for the digital economy*. The latter mentions network developments in its priority no. 6, thematic objective no. 2: *enhancing access to, and use and quality of, information and communication technologies (Broadband target)*.

11 More information available at <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12398-Evaluation-of-State-Aid-rules-for-broadband-infrastructure-deployment/public-consultation> and <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12398-Evaluation-of-State-Aid-rules-for-broadband-infrastructure-deployment>.

- Contribution to the achievement of objectives of common interest;
- Absence of market delivery due to market failures or important inequalities;
- Appropriateness of state aid as a policy instrument;
- Existence of incentive effect;
- Aid limited to the minimum necessary;
- Limited negative effects; and
- Transparency.

Overall, the positive effects must be greater than the potential negative effects.

To summarise, the following needs to be considered when assessing applicability of block exemptions, or compatibility with Article 107(3) TFEU:

• The category of network

Both Article 52 of the GBER and the Guidelines for State Aid distinguish between basic networks and next generation access (NGA) networks. The NGA networks are defined by at least one of the following characteristics:¹⁹

- Delivering services reliably at a very high speed per subscriber through optical (or equivalent technology) backhaul sufficiently close to user premises to guarantee the actual delivery of the very high speed;
- Supporting a variety of advanced digital services including converged all-IP services; and/or
- Having substantially higher upload speeds compared to basic broadband networks.

It is necessary to differentiate between the two categories when assessing further criteria, such as existing coverage and investment potential.

• Existing coverage and private investment potential

Article 52(3) of the GBER grants exemption for support of networks (both basic and NGA) in areas where no such infrastructure of the given network category is likely to be developed on commercial terms within three years.

Under the Guidelines for State Aid, such areas are defined as “white areas”²⁰

There are also “grey areas”, i.e., areas where one network operator is (or will be) present, and no other network is likely to be developed in the “near future” (more specified as the next three years for NGA networks).²¹

Finally, there are “black areas”, i.e., areas where at least two different operators exist or will exist within the “near future” (again, specified as the next three years for NGA networks).²²

White areas are generally eligible for state aid, provided that all other conditions of compatibility are met. Grey areas require further assessment of compatibility, in order to establish whether a state intervention is necessary. State aid for development of networks in black areas would be incompatible with the internal market, save for very exceptional cases (aid to ultra-fast broadband networks).

• Step change in terms of broadband availability

As a part of the balancing test, the aid beneficiary should prove that the subsidised network would mean a “step change” in terms of availability, capacity, speed, and competition, compared to existing and planned network deployments.²³

• Compatibility with internal market and competition rules

In the GBER, this requirement is expressed by the necessity to comply with the provisions of Chapter I of the GBER.

In the Guidelines for State Aid,²⁴ the internal market and competition rules which must be observed are essentially the same as required under Article 52 of the GBER.

To grant state aid which falls under the GBER exemption, or which is compatible with the internal market under Article 107 TFEU, the aid provider needs to observe the rules regarding:

- Detailed mapping and analysis of coverage;
- Public consultation;
- Competitive selection process of the third-party operator who will deploy and operate the subsidised infrastructure (whether such operator is direct beneficiary of state aid or not), with particular emphasis on the most economically advantageous offer;
- Technological neutrality;
- Pooling and use of existing infrastructure to the maximum extent possible;
- Wholesale access to the subsidised infrastructure;
- Pricing of the wholesale access which is based on the pricing principles set by the national regulatory authority and on benchmarks;
- Monitoring and clawback mechanisms for aid exceeding EUR 10 million; and
- Transparency and reporting requirements.

In recent years, the Commission approved state aid for several projects to invest in very high capacity networks in white and grey areas.

For instance, in Austria,²⁵ state aid was granted to a newly established, fully state-owned company controlled by the government of Styria whose objective is to ensure rolling-out passive infrastructure capable of supporting the deployment of ultrafast broadband networks in white NGA areas in Styria.

In contrast, German²⁶ and Spanish²⁷ state aid was granted to private network operators responsible for the deployment and operation of the subsidised networks in certain white and grey NGA areas of the countries concerned.

In all these cases, the Commission assessed the compatibility with Article 107(3) TFEU, finding that the aid is compatible under Article 107(3)(c), i.e., as *aid to facilitate the development of certain economic activities or of certain economic areas where such aid does not adversely affect trading conditions to an extent contrary to the common interest*. Accordingly, the cases involved measures to ensure compatibility as described in the Guidelines for State Aid, especially regarding wholesale access to the subsidised infrastructure and other competition safeguards.

So, although instances where state aid for building networks was found compatible with the internal market rules exist, such cases are the exception and not the rule. As is apparent from the strict conditions applicable to state aid both in case of a compatibility assessment and the applicability of exemption under GBER (mostly its limitation to hard-to-reach areas where private investment is unlikely in the foreseeable future), state aid must under no condition supersede private investments. State aid should be applied only if infrastructure-based competition cannot be achieved under market conditions, and if no commercial-based alternative to state aid (discussed in the final part of this article) is possible. Additional measures should also be taken to ensure that the provided state aid will contribute to fixing the market failure with maximum efficiency, such as access to subsidised and pre-existent infrastructure. Further sharing by means of wholesale access is a way to use the state aid to promote service-based competition, and also to avoid unnecessary duplication of infrastructures.

²⁴ Paragraph 78 of the Guidelines for State Aid.

²⁵ *Broadband Styria - Austria* (Case SA.50844) Commission Decision of 8 November 2018, C(2018) 7311 final.

²⁶ *Bavarian gigabit pilot project* (Case SA. 48418) Commission Decision of 18 December 2018, C(2018) 8617 final.

²⁷ *Broadband Scheme for NGA White and Grey Areas – Spain* (Case SA.53925) Commission Decision of 10 December 2019, C(2019) 8831 final.

¹⁹ Paragraph 58 of the Guidelines for State Aid.

²⁰ Paragraph 75 of the Guidelines for State Aid.

²¹ Paragraph 76 of the Guidelines for State Aid.

²² Paragraph 77 of the Guidelines for State Aid.

²³ Paragraph 52 of the Guidelines for State Aid.

Keeping in mind the limits of state aid, a brief discussion of possible market-based alternatives to state aid is necessary to bring a conclusion of this article.

4. Alternatives of State Aid

As explained in the previous part of this article, the legal framework that enables Member States to grant state aid for network development projects is in place and has been used multiple times in specific cases.

However, it should be kept in mind that state aid is only possible if there is no alternative to granting public funding to overcome the lack of connectivity.²⁸

Limits to state aid are apparent from the summary of regulatory approach in the previous part of this article. The key point to take from the limitations of state aid is that **public funding should not crowd out private investment**. Doing so would mean a distortion of competition, and therefore incompatibility with both EU and national competition rules. As indicated above the EECC also emphasises the leading role of the market in ensuring that the connectivity targets are met.²⁹ The regulatory decisions, including the decision to provide state aid or use of other interventions, should be preceded by a market evaluation and consultations with all stakeholders, including users and consumers.³⁰ Only after such evaluations and consultations justify the need for the state intervention, the intervention should go ahead.

Therefore, alternatives to state aid that would enable meeting network deployment and coverage goals without the necessity for public funding need to be considered. The authors explore two of these alternatives – network sharing and wholesale access.

Network sharing

One alternative proposed in the EU documents is **network sharing**.

The Guidelines for State Aid propose the support for sharing of passive infrastructure, both by operators and by third parties (e.g., owners of civil engineering structures), as an example of administrative and regulatory measures that do not require state aid.³¹

Apart from passive infrastructure, operators can also share active components such as radio access network (RAN) equipment, core networks, and even frequencies. Due to current competition concerns related to the sharing of frequencies and core network among competitors that would exceed the scope of this article, the focus of the authors is on passive sharing and RAN sharing.

Passive sharing has long been accepted by the national regulatory authorities as a form of cooperation that does not raise competition concerns.³² There have also been several instances in which the Commission found that predominantly passive infrastructure sharing agreements (in relation to 3G networks) do not constitute prohibited agreements, as they *contribute to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit*, and therefore falling under the exemption under Article 101(3) TFEU.³³

This long-established view on passive infrastructure sharing, together with the recommendation of the pooling of passive infrastructure in the Guidelines for State Aid, leads the authors to conclude that passive infrastructure sharing should be preferred to state aid in most scenarios.

28 See, e.g., Paragraph 44 of the Guidelines for State Aid.

29 Recital 229 of the EECC.

30 Recitals 29 and 67 of the EECC.

31 Paragraph 28 of the Guidelines for State Aid.

32 See, e.g., conclusions about passive infrastructure sharing in the *BEREC Common Position on Mobile Infrastructure Sharing* of 13 June 2019, p. 18.

33 *O2 UK Limited / T-Mobile UK Limited ('UK Network Sharing Agreement')* (Case COMP/38.370) Commission Decision of 30 April 2003, 2003/570/EC, and *T-Mobile Deutschland/O2 Germany: Network Sharing Rahmenvertrag* (Case COMP/38.369) Commission Decision of 16 July 2003, 2004/207/CE.

With active sharing of RAN elements, the situation is more complex. RAN sharing has been increasingly used as a counterfactual scenario in the Commission's merger decisions, as a form of cooperation that would bring similar benefits as mergers or joint ventures, without associated anti-competitive effects.³⁴ Active network sharing agreements represent a common business practice in the telecommunications industry, as multiple such agreements are in place across the EU countries.³⁵

To conclude that active network sharing agreements can be used instead of state aid assistance, a competition assessment needs to be carried out.³⁶ An important element of such an assessment is the feasibility of infrastructure-based competition in the concerned area. With decreasing feasibility of the infrastructure-based competition, the benefits of active network sharing increase, and vice versa.³⁷

Although other competition effects of active network sharing still need to be considered, with certain simplification we can indicate that where an infrastructure-based competition cannot be realistically expected, a market-based solution in the form of active network sharing should prevail over state aid.

Therefore, it can be concluded that both passive and, in some cases, also active (RAN) network sharing can lead to the deployment of a network that would achieve regulatory goals without the necessity to use state aid.

The nature of upcoming technologies, mainly 5G networks, will most likely lead to a further increase in infrastructure sharing, and emphasis on service-based competition over infrastructure-based competition, as some strategies for 5G development in the EU already suggest.³⁸

Wholesale access

Wholesale access may accompany state aid (in form of access to subsidised networks), or it may serve as an alternative measure intended to maximise the efficient use of radio spectrum.

Wholesale access is an obligatory part of providing state aid for development and deployment of broadband networks. Both the GBER³⁹ and Guidelines for State Aid⁴⁰ mandate the aid beneficiary to provide wholesale access to all interested operators under non-discriminatory conditions.

Wholesale access to subsidised networks should be granted for at least 7 years (active elements), and indefinitely for passive elements such as ducts and poles.

The wholesale access is not limited to new (subsidised) infrastructure, but it also aims to ensure efficient use of existing infrastructure. For the purpose of facilitating the use of existing infrastructure, any operator who enters the selection procedure must provide information on its infrastructure in the target area (including

34 See for instance *TELEFÓNICA DEUTSCHLAND/ E-PLUS* (Case M. 7018) Commission Decision of 2 July 2014, C(2014) 4443 final, para 1097, or *HUTCHISON 3G ITALY / WIND / JV* (Case M.7758) Commission Decision of 1 September 2016, C(2016) 5487 final, paras 1615-1630.

35 See, e.g., Bourreau, Marc, Hoernig, Steffen and Winston Maxwell (2020). *Implementing, Co-investment and Network Sharing. A report by the Centre on Regulation in Europe (CERRE)*, pp. 46-81.

36 See *BEREC Common Position on Mobile Infrastructure Sharing* of 13 June 2019, p. 16.

37 *Ibid*, p. 19.

38 See Blackman, Colin and Simon Forge (2019). *5G Deployment: State of Play in Europe, USA and Asia*. Study for the Committee on Industry, Research and Energy, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, p. 28 (Recommendation 3): "Policy for 5G networks should be based on encouraging infrastructure sharing with separation of infrastructure and services. This could be fundamental to the financing model for 5G networks to provide widespread coverage for the Digital Single Market."

39 Article 52(5) GBER.

40 Paragraph 78(g) of the Guidelines for State Aid.

conditions and prices for access) to the national regulatory authority as well as other bidders.⁴¹ As a result, all operators who wish to become a part of the subsidised scheme shall include the existing infrastructure in their bid, regardless of the operator. That means though that any operator entering the selection procedure must be prepared to make its infrastructure available to other network operators taking part in the same procedure.

Wholesale access is not only limited to state aid cases. It may also be imposed by national regulatory authorities as a pro-competitive measure adopted when granting, amending, or renewing rights of use for radio spectrum,⁴² or as a remedy imposed on undertakings with significant market power.⁴³

The obligatory wholesale access has a form of an offer which must be published by the operator obliged to provide such access. All interested parties then may ask for access to be granted to them, which the obliged operator must not refuse on discretionary or discriminatory basis.

Unlike voluntary network sharing or other commercial-based agreements, mandatory wholesale access usually involves strict regulatory conditions, including price regulation. In cases of state aid, both the GBER⁴⁴ and Guidelines for State Aid⁴⁵ require the pricing to be based on the *pricing principles set by the national regulatory authority and on benchmarks that prevail in other comparable, more competitive areas of the Member State or the EU, taking into account the aid received by the network operator. The national regulatory authority shall be consulted on access conditions, including pricing, and in the event of dispute between access seekers and the subsidised infrastructure operator.*

Setting the correct pricing structure is a complex process and should always be based on proper expert analyses. An interesting example of further expert involvement is provided in the case of *Bavarian gigabit pilot project*. In this project, the conflicts between the operator obliged to provide wholesale access and the service provider entitled to it (including price) should be decided by municipality that provides the aid, based on an opinion by an expert appointed by this municipality.⁴⁶

In the opinion of the authors, expert involvement should be the norm in other cases too, as it increases transparency and oversight over regulated prices, which are important for both sides of wholesale access.

Unlike in state aid cases, when wholesale access is imposed as a market driven measure, the regulator does not have to regulate prices at all (provided that other measures are in place to prevent excessive pricing), in order to promote efficient investment and innovation by operators who build new or upgraded networks.⁴⁷

As with the network sharing agreements, due to the growing demands on connectivity and subsequent costs of building and upgrading networks that would meet these demands, it should mean that regulators will reflect this and adopt a more flexible stance on wholesale access obligations.

5. Conclusion

The current regulatory framework for providing state aid for network deployment and development introduced in this article is undergoing review to evaluate the effectiveness, effectivity and relevance of the rules contained in it.

As the regulatory practice demonstrates, state aid shall only be limited to cases where the market is unable to deliver the connectivity that would meet EU strategic goals, such as in remote and sparsely populated areas where the building of networks are expensive and profitability is low. If private investment is possible, state aid must not crowd it out. Correspondingly, the regulatory framework should support natural market development without the necessity for ex-ante regulatory interventions, which should be gradually phased out and completely replaced by competition rules. Given also EECC's emphasize on market-driven solutions, the principle above should be kept in mind during review of state aid rules.

With the growing complexity and costs of modern networks which are being developed and deployed, such as 5G networks, the authors expect that the market will increasingly rely on infrastructure sharing and cooperation. The role of regulatory authorities should be to observe that such cooperation complies with competition law. They should only intervene using state aid measures if the undertakings fail to provide market solution.

41 See, e.g., *Bavarian gigabit pilot project* (Case SA. 48418) Commission Decision of 18 December 2018, C(2018) 8617 final, paras 44 and 96, and *Broadband Scheme for NGA White and Grey Areas – Spain* (Case SA.53925) Commission Decision of 10 December 2019, C(2019) 8831 final, paras 40 and 92. In the *Bavarian gigabit pilot project*, the access to existing infrastructure is expressly limited to passive infrastructure; the Spanish broadband scheme applies to *any existing infrastructure that may be used for building the network*.

42 Article 52(2)(a) EECC.

43 Chapter IV EECC.

44 Article 52(6) GBER.

45 Paragraph 78(e) of the Guidelines for State Aid.

46 *Bavarian gigabit pilot project* (Case SA. 48418) Commission Decision of 18 December 2018, C(2018) 8617 final, para 46.

47 See Recital 193 of the EECC, which states that the national regulatory authorities should be able to decide *not to impose regulated wholesale access prices on next-generation networks if sufficient competition safeguards are present*.

Network Sharing: Historical Experience of Virtual Network Operator with Supervising Authorities

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Abstract The article deals with network sharing between (mobile) operators and virtual operators. In particular, it focuses on the methods of regulation that are to ensure fair competition in the market, i.e., ex ante regulation by the Czech Telecommunications Office and ex-post regulation by the Office for the Protection of Competition.

The conclusions are based on experience with ADSL regulation since the beginning of the new millennium and with (in) success in ensuring fair competition in this market. The authors believe that the theoretical arrival of a fourth operator cannot be relied upon to ensure satisfactory competition in the market, but that sufficient regulation by national authorities and the European Commission can already ensure a truly competitive environment for virtual operators in the market and (price) benefits for end users.

Key words network sharing, operators, ADSL, competitors

This article follows the presentation on Competition and Telecommunications' Network Sharing workshop organized by the Faculty of Law, Charles University in Prague on 23 October 2020. The presentation was focused on the position of mobile network operators and their network sharing.

There has been a lot of discussion lately about the benefits and problems of network sharing between mobile network operators (**MNO**). Such a discussion has been connected with the upcoming 5G auction and possible 4th mobile operator in the Czech Republic and its future impact on the market. Nevertheless, in the following article we would like to draw your attention to other possibilities on how to increase competition on the market through sharing a network between a MNO and mobile *virtual* network operators (**MVNO**).

Better regulation in the field of MVNOs could bring many additional competitors to the current three MNOs in the Czech Republic: T-Mobile Czech Republic a.s. (**T-Mobile**), O2 Czech Republic a.s. (**O2**) and Vodafone Czech Republic a.s. (**Vodafone**), without too much effort or costs which could be connected with a future 4th MNO.

1. What is network sharing?

Network Sharing is simply a method of sharing some portions of the network architecture among multiple parties. As mentioned above, there can be sharing between MNOs. In the Czech Republic, there is currently an ongoing investigation by the European Commission (**Commission**) regarding a network sharing agreement between O2 CZ/CETIN and T-Mobile CZ.²

Undeniably, there may be some benefits of network sharing between MNOs, such as consumer benefits in terms of a faster roll-out, cost savings, and coverage in rural areas. However, in the present

case, the Commission has concerns that the network sharing agreement reduces competition, primarily, due to the fact that the Czech mobile communications market is highly concentrated in only three mobile network operators and O2/CETIN and T-Mobile are the two largest MNOs.³

Notwithstanding the result of the Commission's decision, the fact is, that the Czech market is highly concentrated, and shares of MNOs on the Czech mobile market are quite stable, which could mean that there is no effective competition taking place between MNOs.

2. What are MVNOs?

However, the competition on the mobile market does not have to be between only three or four MNOs. Another way to increase competition is to allow MVNOs on the market and to set fair regulation for the relationship between MNOs and MVNOs.

MVNOs are effectively defined by their lack of spectrum licenses.⁴ They necessarily need to have an agreement in place to access the network of at least one MNO in order to provide services. Such access can be based on a reference offer or a commercial agreement. The obligation of MNOs to publish a reference offer is regulated by Act No. 127/2005 Sb., on Electronic Communication (**AEC**), especially by Sec. 82(2) of AEC:

In accordance with Sec.51 AEC, the Office⁵ is entitled to impose on an undertaking with significant market power on the relevant market an obligation to publish a reference offer of access or interconnection with a description of relevant offers divided into parts according to market needs and related contractual conditions including prices. This entity may not require in the reference access or interconnection offer that undertakings requesting access or interconnection pay for resources and operational services that are

1 The authors provide legal assistance to undertakings with respect to competition and telecommunication law matters. The information and views expressed in this article, regardless of whether only general observation of any kind of detailed assessment, are solely those of the authors. This article has not been mandated by any third party.

2 On 7 August 2019 Commission sent Statement of Objections for their network sharing agreement. The Commission has informed parties of its preliminary view that their network sharing agreement restricts competition in breach of EU antitrust rules. A full text of press releases is available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5110.

3 The network sharing cooperation between O2 CZ/CETIN and T-Mobile CZ started in 2011 and has been increasing in terms of its scope. Currently, it covers all mobile technologies (i.e., 2G, 3G, and 4G) and the entire territory of Czechia with the exception of Prague and Brno, thus amounting to around 85% of the population. A full text of the press releases is available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5110.

4 Czech Telecommunication Office: Analysis of the wholesale mobile services market, Line 1960 and following.

5 The Office here means the Czech Telecommunication Office – noted by the authors.

not necessary for the requested service. This does not affect the obligation to publish a reference offer pursuant to Section 85(1)⁶.

Apart from the radio spectrum, MVNOs may use their own customer service; as well as billing support systems; marketing, and sales personnel; or any parts from the above.⁷ As you can see in the chart below, the range of control of activities by an MNO/MVNO varies from simply providing access to the radio spectrum to MVNOs only providing specialized sales channels.

Chart No. 1: Range of control by MNO/MVNO

Radio Spectrum	Network Service	Billing & Customer Care	Marketing & Sales
MNO	Full MVNO		
MNO	Medium MVNO		
MNO	Branded Reseller MVNO		
MNO			

3. Position of MVNOs on the Czech market

After some resistance from MNOs, MVNOs started to appear on the Czech market in 2012. The appearance of MVNOs has been connected with Market Analysis No. 8, which was conducted by the Czech Telecommunications Office (CTO), where the CTO noted a significant change in the behaviour of MNOs in respect of MVNOs: "In the Office's view, this was mainly due to the real threat of corrective measures based on the results of the analysis of the relevant market No. 8 and the possible entry of a new network operator into the retail mobile services market following the then ongoing frequency auction."⁸

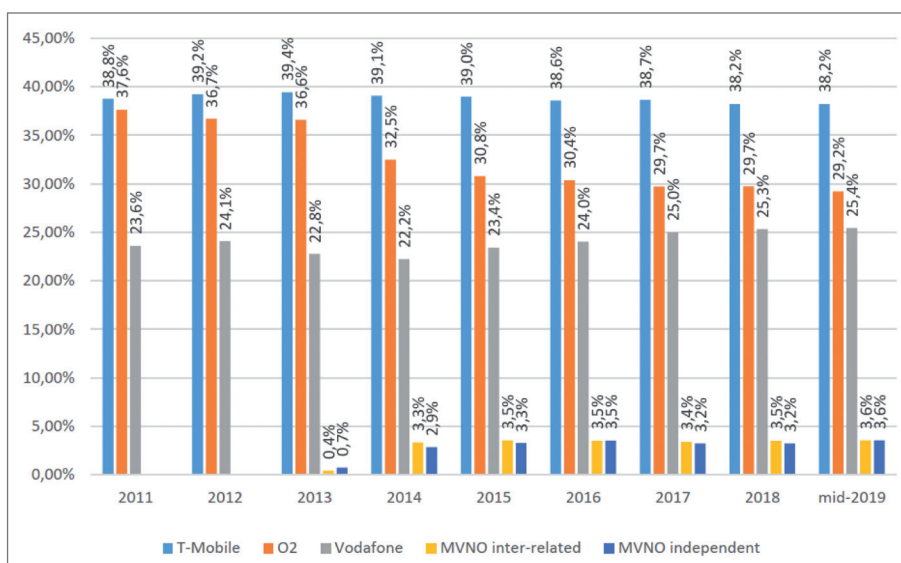


Chart 2: Development of market shares based on the total number of active SIM cards on the retail market (Source: Czech Telecommunication Office: 2019 Czech Telecommunication Office's Annual Report)

6 The Sec. 85(1) of AEC states: "An undertaking with significant market power in the relevant market providing a public communications network, which has been ordered to make local loops available, is required to publish a reference offer for local loop unbundling."

7 Czech Telecommunication Office: Mobile virtual network operator. (2020 October 16). Retrieved 6 November 2020, from https://en.wikipedia.org/wiki/Mobile_virtual_network_operator.

8 Czech Telecommunication Office: Measure of a general nature - Market analysis No. A/8/03.2016-2, Market No. 8 – Access and call origination on public mobile telephone networks, p. 3.

In the following year, the auction for 800 MHz, 1800 MHz, and 2600 MHz took place, and one of the conditions for the auction was that MNOs must undertake the obligation to publish a binding reference offer for MVNOs. The reference offer should have been published within 6 months of starting to use the allocated frequencies, while MNOs gradually fulfilled this commitment.⁹

As of today, the total number of MVNOs is 143, but only 30 MVNOs (21 %) manage more than 1,000 SIM cards. MVNOs started to gain some (small) market share in 2013; however, since that time, the market share has remained at the same level. Such long-term stability of market shares is usually an indication of insufficient competition in the market.

On the chart above, MVNOs are divided into inter-related (to MNOs) – i.e., MVNOs owned (at least partially) by MNOs (e.g., COOP Mobil s.r.o., O2 Family, s.r.o., and Tesco Mobile ČR s.r.o.), and truly independent MVNOs not connected with MNOs by any ownership. The truly independent MVNOs have a market share of about only 3.5 %. Whereas the biggest independent MVNO on the market is SAZKA a.s. with a market share of 1.3 %.¹⁰

One of the reasons for the low market share of independent MVNOs may be that in 2013 MNOs introduced new unlimited tariffs, which ultimately led to a relatively significant drop in prices on the retail market, while the price policy did not reflect wholesale commercial contracts. Therefore, MVNOs were allowed to enter the market but without the strength to actively compete with MNOs.

Nor is there any competition between MNOs for an MVNO. Once the commercial contract is signed with one MNO, the other MNOs do not strive to conclude a commercial contract with the MVNO.

For an illustration of this, please see chart 3 regarding price development according to an average minute price since 2006.

As you can see the price per minute decreased significantly. A similar chart is also available for the price development of mobile data services by average price per MB of data with a correspondingly decreasing function.

According to the CTO's analysis¹¹, there have not been any new developments in the MVNOs market lately due to their dependency on MNOs, which does not allow them to present any competitive offers to the end-users. MVNOs can, in a convoluted way, also compete with providing sufficient mobile internet access to its customers. If an MVNO has not concluded LTE services in commercial contracts with its MNO, it is difficult for them to renegotiate their contract insofar as the MNOs have no incentive to do so.¹²

4. CTO's regulation

It must be noted that the CTO has the ability to influence the reference offer of MNOs according to Sec. 82 (3) of AEC: "The Office is entitled to decide on a *change* in the reference offer of access or interconnection, if this offer does not lead to the consistent fulfilment of obligations under this Act."

9 Czech Telecommunication Office: Measure of a general nature - Market analysis No. A/8/03.2016-2, Market No. 8 – Access and call origination on public mobile telephone networks, p. 4.

10 Czech Telecommunication Office: 2019 Czech Telecommunication Office's Annual Report.

11 Czech Telecommunication Office: Analysis of the wholesale mobile services market, Line 1894 and following.

12 Czech Telecommunication Office: Analysis of the wholesale mobile services market, Line 362 and following.

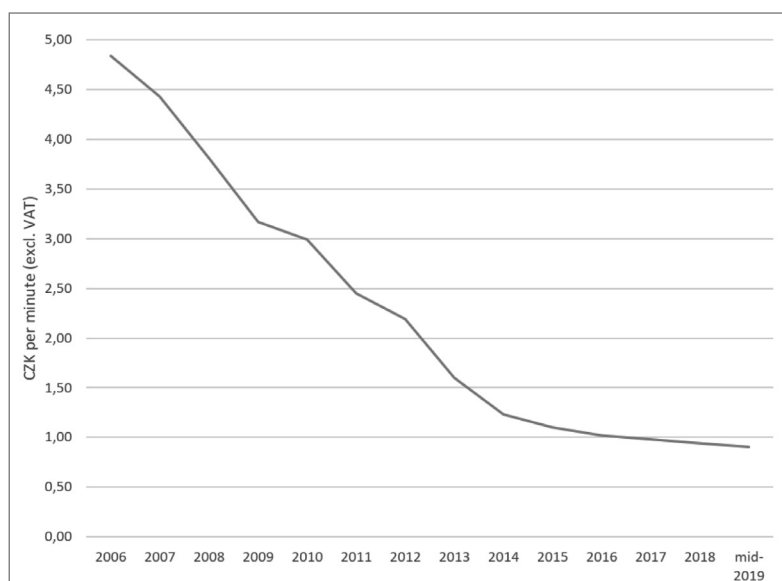


Chart 3: Average retail price per actual calling minute (Source: Czech Telecommunication Office: 2019 Czech Telecommunication Office's Annual Report)

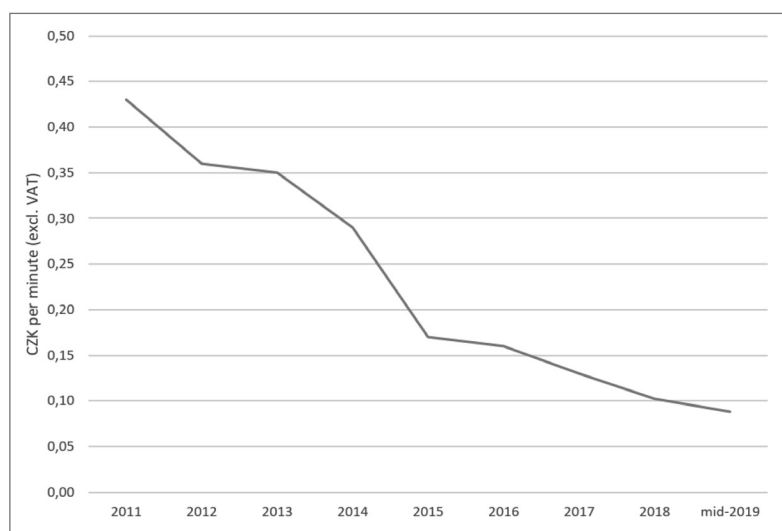


Chart 4: Average retail price for 1 MB of data (Source: Czech Telecommunication Office: 2019 Czech Telecommunication Office's Annual Report)

For example, in 2020, the CTO finally launched an investigation into O2 for compliance with the obligation to set the reference offer's prices of wholesale services provided on the LTE network in such a way as to enable equally effective competitors to operate profitably on the retail market. The result of this check was a reduction in prices per MB of data for mobile services by 35.7 %, and of data for services at a fixed location by 8.7 %.¹³

At first glance, it looks like the CTO is on the side of MVNOs; however, the above-mentioned inspection arrives at a different perception since the CTO has admitted that no reference offer was ever signed by any MVNO. Therefore, the CTO is slowly regulating a reference offer which has no real use on the market.¹⁴ We can only

13 Czech Telecommunication Office: Monthly Monitoring Report No. 07/2020.

14 Slížek, D. (2020 August 14). ČTÚ kontroloval referenční LTE nabídku O2, operátor musel snížit ceny za data. Retrieved November 06, 2020, from <https://www.lupa.cz/aktuality/ctu-kontroloval-referencni-lte-nabidku-o2-operator-musel-snit-ceny-za-data>.

surmise as to why no reference offer has been signed, but based on public interviews with MVNOs¹⁵, they are claiming that the reference offer is unacceptable as there are excessive prices in order for them to survive on the retail market.

Another example of a lack of real regulatory power by the CTO is demonstrated by Decision No. ČTÚ-1 872/2020-606/III.vyř. dated 11. March 2020 regarding the dispute between Český bezdrát (as the MVNO) and T-Mobile (as the MNO) concerning the price amendment of a commercial contract between them. Český bezdrát wanted the CTO to issue a pricing regulation in the form of an obligation for T-Mobile Czech Republic and to conclude such an amendment with them. However, the CTO refused to decide on the petition due to the lack of regulatory power as well as due to the fact that not all means of mutual communication were exhausted.

From the above examples, it is clear that virtual operators (despite their significant number) cannot really compete with MNOs on the retail market, and therefore, they cannot favourably influence the price level to end-users, especially for mobile tariffs with a high volume of data.¹⁶

One can conclude that the competition on the market is ineffective and the (collective) dominance by MNOs may in fact exist, which can be abused in many forms, e.g., margin squeeze, predatory pricing, etc. The *ex ante* regulation issued by the CTO by itself is not enough to prevent the MNOs from engaging in such abusive conduct. For a comparison, we can look at the historical experience of other virtual operators with regulations issued by the CTO and other national authorities.

5. ADSL historical experience

A climate of ineffective competition has been pervasive in the telecommunications market in the Czech Republic for a quite long time now. The big players tend to act independently on their competitors and even on the regulatory bodies. For example, there is historical experience with regulation (or a lack thereof) by the CTO and the Czech Competition Office (CCO) on the ADSL market.

In the 1990's, the most common form of access to the internet was through a dial-up connection.¹⁷

Historically, there has been only one provider of fixed-line services, i.e., Český Telecom (the state-owned telecommunications company). Later, the company was renamed O2. Český Telecom was a vertically integrated undertaking, providing wholesale access to its competitors on the retail market.

15 Slížek, D. (2020 August 17). Petr Benýšek (Český bezdrát): Velcí operátoři s námi vůbec nejdou. Říkají, že virtuálů mají dost. Retrieved November 07, 2020, from <https://www.lupa.cz/clanky/petr-benysek-cesky-bezdrat-velci-operatori-s-nami-vubec-nejdou-rikaji-ze-maji-virtualu-dost>.

16 Czech Telecommunication Office: Analysis of the wholesale mobile services market, Line 758 and following

17 Dial-up Internet access is a form of Internet access that uses the facilities of the public switched telephone network (PSTN) to establish a connection to an Internet service provider (ISP) by dialling a telephone number on a conventional telephone line. Dial-up connections use modems to decode audio signals into data to send to a router or computer, and to encode signals from the latter two devices to send to another modem. Source: https://en.wikipedia.org/wiki/Dial-up_Internet_access.

Even though Český Telecom as the incumbent was the monopoly owner for providing fixed-line services, there have been several competitors on the downstream market who have also provided dial-up internet access to their customers. As such, they had a similar position to the incumbent as do MVNOs to MNOs today; in other words, we can quite simply call them virtual network operators.

In 2002 and 2003, ADSL technology started to appear on the market. In order to provide such services, it was necessary to have access to the Local Loop¹⁸, which was held by the incumbent.

The competitors repeatedly called to make the Local Loop available so that they would be able to provide their services to customers. In this respect, the incumbent was obliged to provide access to the Local Loop based on an amendment to Act No. 151/2000 sb., on Telecommunications. Nevertheless, when the incumbent finally started to provide access, the incumbent was requesting prices which were not regulated.

In terms of the Guidance on the Commission's enforcement priorities in applying Article 102, the very first article states that the dominant position is *ipso facto* not a problem; however, the dominant undertaking has a special responsibility to maintain undistorted competition.¹⁹

During the next several years, many of the virtual network operators ceased their business activities. As a consequence, the incumbent thus managed to acquire and maintain a very large market share on the retail market for internet services, which it still utilizes and enjoys to this day with no real competition.

The CTO has tried to regulate the wholesale prices of the incumbent, but the question remains as to whether it did so in time and to a sufficient extent. For example, it started to regulate a maximum price for some parts of the access to the Local Loop on 25 April 2005.²⁰ The maximum pricing regulation for parts of prices charged to virtual network operators has thereafter been amended on several occasions.

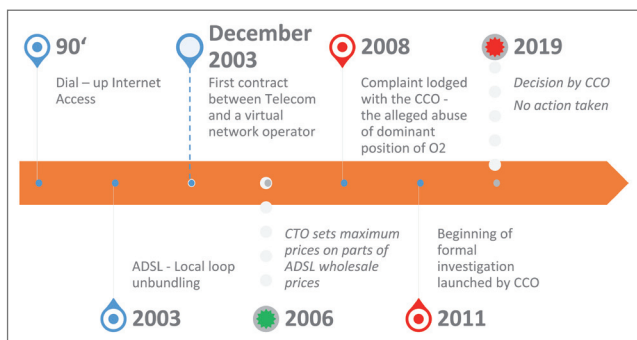


Chart 5: Timeline of ADSL regulation

18 The local loop (also referred to as the local tail, subscriber line, or in the aggregate as the last mile) is the physical link or circuit that connects from the demarcation point of the customer premises to the edge of the common carrier or telecommunications service provider's network. Source: https://en.wikipedia.org/wiki/Local_loop.

19 Communication from the Commission — Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings (2009/C 45/02), paragraph 1: "Article 82 of the Treaty establishing the European Community (Article 82) prohibits abuses of a dominant position. In accordance with the case-law, it is not in itself illegal for an undertaking to be in a dominant position and such a dominant undertaking is entitled to compete on the merits. However, the undertaking concerned has a special responsibility not to allow its conduct to impair genuine undistorted competition on the common market. Article 82 is the legal basis for a crucial component of competition policy and its effective enforcement helps markets to work better for the benefit of businesses and consumers. This is particularly important in the context of the wider objective of achieving an integrated internal market."

20 The Czech Telecommunication Office: Pricing regulation No. 03/PROP/2005.

The CTO has been obliged to provide market analyses with periodic reviews. For example, they have issued a Measure of a general nature in 2006 wherein they ascertained, in respect of the incumbent's pricing policy, the following: "The analysis has shown that disproportionately high prices are applied in the relevant market to the detriment of end-users in cases where the pricing regulation is not applied."²¹ In the reasoning of such an analysis, the CTO stated, that although there has already been a pricing regulation which has led to some decrease, the prices still remain significantly above the level charged in other Member-States of the European Union.²²

We must note that an *ex ante* regulation of maximum prices itself cannot in and of itself either prevent or deter a margin squeeze from occurring. The Court of Justice in the *Deutsche Telekom* case²³ ruled that by virtue of the fact that an *ex ante* regulation of maximum prices has occurred is without prejudice to affording the dominant undertaking to adjust its retail prices on a fair level, inasmuch as the dominant undertaking is still free to set prices which are lower than the regulated maximum level.

However, in the above-mentioned case the incumbent standardly applied the price in the maximum possible amount set by the pricing regulation.²⁴

6. Investigation launched by the Czech Competition Office

The potential abuse of a dominant position by the incumbent was also investigated by the Czech Competition Office (CCO), who has the authority to issue an *ex post* regulation against abusive dominant behaviour.

The inquiry was initiated by the CCO in 2008; due to a lengthy and protracted procedural battle, the CCO was obliged to open a formal investigation in 2011. Nevertheless, it took another 8 years before the CCO was able to issue any final decision. Finally, in 2019 the CCO concluded that due to a lack of the incumbent's relevant

21 The Czech Telecommunication Office: Measure of a general nature - Market Analysis No. A/11/03.2006-2 Wholesale full access to the local loop or shared access to the local loop or section of the local loop of the network for the purpose of providing electronic communications services, Article 4.

22 The Czech Telecommunication Office: Measure of a general nature - Market Analysis No. A/11/03.2006-2 Wholesale full access to the local loop or shared access to the local loop or section of the local loop of the network for the purpose of providing electronic communications services, p. 25: "The main objective of the regulation under the previous regulatory framework was to limit the ability of ČESKÝ TELECOM, a.s. act independently of their competitors and customers, in particular, when setting prices and other conditions. This was achieved both through price decisions and by the fact that the Office entered into contractual relations in accordance with the law (access reference offers, access agreements) and by its decision set certain conditions for the provision of services. The pricing regulation was applied due to the fact that ČESKÝ TELECOM, a.s. demand disproportionately high prices for access, which would not allow the development of a competitive environment. The result of the pricing regulation was a reduction in prices (see Charts No. 3 and No. 4), which were originally provided by ČESKÝ TELECOM, a.s. set in the access reference offer. Nevertheless, the prices still significantly exceed the prices charged in other EU countries."

23 Judgement of 14 October 2010, *Deutsche Telekom AG*, C-280/08 P, ECLI:EU:C:2010:603, paragraph 92: "The same applies to the appellant's claim that the purpose of RegTP's regulation is to open the relevant markets up to competition. It is common ground that said regulation did not in any way deny the appellant the possibility of adjusting its retail prices for end-user access services or, therefore, of engaging in autonomous conduct that is subject to Article 82 EC, since the competition rules laid down by the EC Treaty supplement in that regard, by an *ex post* review, the legislative framework adopted by the Union legislature for *ex ante* regulation of the telecommunications markets."

24 The Czech Telecommunication Office: Measure of a general nature - Market Analysis No. A/4/05.2010-6 Wholesale (physical) access to network infrastructure (including shared or full unbundled access to the local loop) at a fixed location, p. 46.

data they were not able to decide whether the incumbent had in fact abused its dominant position. Due to the legal principle of *in dubio pro reo* (English: in doubt for the accused), the CCO determined that the abuse of a dominant position was not able to be proven, and therefore no action was necessary in connection therewith.

The publicly available wording of Decision No. ÚOHS-S109/2011/DP-02225/2019/830/JVj dated 23 January 2019 (**Decision**) does not provide any answers or explanations about the methodology used by the CCO in terms of assessing a margin squeeze. The decision has been excessively anonymized due to the trade secrets exemption. However, it is clear that the CCO at one point (Art. 242 of the Decision) comes to the conclusion that the incumbent has in fact squeezed the margin. But then later, the CCO does a complete reversal and arrives at the conclusion that without the incumbent's data the margin squeeze test cannot be duly performed.

Nevertheless, the European case law²⁵ has come to different conclusions in similar cases. If the data of the dominant undertaking is not readily available, then the competitors' data is used (so-called Reasonably Efficient Competitor Test) in lieu thereof. From the publicly available version, it is unclear as to why the CCO did not follow the guidance of the European case law and thus failed to employ the Reasonably Efficient Competitor Test.

7. Similar cases in other Member-States

If we look outside the borders of the Czech Republic, the Commission has been quite successful in proving margin squeezes committed by incumbents in other Member-States. In fact, such a decision has recently been issued in Slovakia²⁶. Notably, the factual grounds presented are rather similar to the above-mentioned alleged abuse of dominant position by the incumbent in the Czech Republic. Similarly, the Slovakian incumbent was also charging excessive prices for wholesale connections to its competitors on the downstream market.

In general, the General Court upheld the Commission's decision about the abuse of dominant position by Slovak Telekom in the form of a margin squeeze.²⁷ However, the ruling is currently under appeal at the Court of Justice.

Other notable cases of margin squeeze in the telecommunication market include, e.g., in Germany: *Deutsche Telekom AG* (Commission Case No. COMP/C-1/37.451, 37.578, 37.579 upheld by the Court of Justice C-280/08 P); in Sweden: *TeliaSonera Sverige AB* (Court of Justice C-52/09 *Konkurrensverket v TeliaSonera Sverige AB*); and in Spain:

Wanadoo España v Telefónica (Commission Case No. COMP/38.784 upheld by the Court of Justice C-295/12 P).

Therefore, both the Commission and the Court of Justice were able to define and execute the necessary steps for conducting a margin squeeze test, which, if followed by other national authorities, would subsequently contribute to better competition between network operators and virtual network operators.

8. Lesson learned from the ADSL market

Even with the imminent 5G auction, there is no assurance in terms of better competition without strong regulatory incentives. From the ADSL case, we can learn that it is necessary to regulate the market within the appropriate time limits as well as, if not more importantly, with the appropriate weight and intensity.

The CTO had the indication that the incumbent had been charging excessive prices to its competitors and did attempt to regulate it; however, in general, the *ex ante* regulation is not sufficient to fully prevent or deter any abuse of dominant position from occurring. The final resolution as to whether the incumbent had in fact abused its dominant position took 15 years from the introduction of ADSL technology, with no clear-cut decision in the end. Nor was the CCO able to even decide whether the incumbent had in fact abused the dominant position.

As you can see the lack of *ex ante* and *ex post* regulation on the ADSL market have come to such a point that only the incumbent in fact remains, which is the integrated undertaking. As such, the losers in a such situation are the end-users who have not had real choice for the providers of the services due to the lack of competition in the market.

We remain hopeful that the supervisory authorities have learned from the late ADSL regulations and will, in the future, provide a sufficient regulatory framework for the effective competition of any virtual network operators. In order to do so, robust *ex ante* regulations must be issued by the CTO as well as firm *ex post* regulations by the CCO and, of course, last but not least, by the Commission itself, who had the fortitude to investigate the incumbents on the telecommunication market.

Nevertheless, it would be foolish to assume that the 4th MNO would bring about ideal competition to the market and would somehow not co-exist within the current system. However, by bringing many smaller MVNOs onto the market, who could actually compete with MNOs, could truly be the beginning of healthy competition on the telecommunication market.

25 Judgement of 17 February 2011, *Konkurrensverket v TeliaSonera Sverige AB*, C-52/09, ECLI:EU:C:2011:83, paragraph 46: "It must therefore be concluded that, when assessing whether a pricing practice which causes a margin squeeze is abusive, account should as a general rule be taken primarily of the prices and costs of the undertaking concerned on the retail services market. Only where it is not possible, in particular circumstances, to refer to those prices and costs should those of its competitors on the same market be examined."

26 Judgement of 13 December 2018, *Slovak Telekom*, Case T-851/14, ECLI:EU:T:2018:929.

27 There has been only minor disagreement for time period of 4 months, where the Commission should have proven better the anticompetitive effects.

Judgement of 13 December 2018, *Slovak Telekom*, Case T-851/14, ECLI:EU:T:2018:929, paragraph 267: "Therefore, in the light of settled case-law according to which any doubt in the mind of the Court must operate to the advantage of the undertaking to which the decision finding an infringement was addressed (judgments of 8 July 2004, *JFE Engineering and Others v Commission*, T-67/00, T-68/00, T-71/00 and T-78/00, EU:T:2004:221, paragraph 177, and of 12 July 2011, *Hitachi and Others v Commission*, T-112/07, EU:T:2011:342, paragraph 58), it must be concluded that the Commission has not provided proof that the practice leading to a margin squeeze by the applicant had begun before 1 January 2006. Since the contested decision is, consequently, vitiated by an error of assessment on that point, it is not necessary to examine whether that approach also infringed Article 23 of Regulation No 1/2003, as the applicant claims."

Network Sharing and Counterfactual Analysis under EU Competition Law

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Abstract. Mobile network sharing brings specific challenges to competition law analysis. This article focuses on counterfactual analysis as an analytical tool used in competition law cases to evaluate the effects of potentially anticompetitive conduct under Article 101(1) TFEU. Pursuant to the case law of the EU courts, in determining whether an agreement has a restrictive effect on competition, it is necessary to consider what the situation would have been in the absence of that agreement. Such “but for” analysis will allow the competition authority to establish a causal link between the agreement and the alleged restriction of competition and assess the “appreciability” of the potential restriction. To accomplish that role, a counterfactual analysis needs to be in-depth and cognisant of the specific market and business realities of the case at hand and a counterfactual scenario needs to be realistic and legal in the sense it does not itself constitute an infringement of competition. The technological and commercial complexity of network sharing arrangements may lead the competition authority into identifying more alternative scenarios. In those cases, a separate comprehensive counterfactual analysis needs to be conducted in relation to each of those counterfactuals. In addition, the competition authority needs to make sure that the multiple counterfactuals are compatible with each other, in that one does not constitute an infringement under the other(s). The possibility of identifying more counterfactuals runs the risk of considering as a counterfactual a situation that is not realistic and likely given the specific realities of the case at hand. Hence, increased attention needs to be paid to the technological, commercial, or market considerations that may influence the conduct of the (potential) parties to a network sharing as regards the arrangement of their networks. A useful input into the evaluation of such considerations that may prompt the parties into entering into network sharing agreements may be also derived from the Commission’s merger precedents in the mobile telecommunications sector which highlight the benefits of network sharing as compared to economic concentrations.

Key words counterfactual analysis, Article 101(1) TFEU, restrictions by effect, telecommunications sector, mobile network sharing agreements.

I. Introduction

Mobile network sharing brings specific challenges to competition law analysis. As there is no special regulatory framework dedicated exclusively to network sharing arrangements, the analysis is subject to the principles applicable in any competition law review. Yet, given the complex and highly technical nature of network sharing arrangements, competition authorities may need to be extra vigilant to make sure these general analytical frameworks applied in network sharing cases adequately reflect the specifics of such arrangements.

This article will focus on the counterfactual analysis as an analytical tool used to evaluate the effects of potentially anticompetitive conduct. It will first briefly explain what the counterfactual analysis is, what its role is in the “by effect” analysis of conduct restrictions, and what requirements a counterfactual analysis must fulfil to comply with the applicable legal standards. Next, the article will explore the usage of network sharing as a counterfactual to mergers and its implications for counterfactual analysis in network sharing cases. Finally, specific challenges to counterfactual analysis that arise in connection with network sharing will be analysed.

II. Counterfactual analysis

a) Obligation to perform counterfactual analysis in “by effect” cases

In general terms, a counterfactual analysis serves to assess the effects of an action or event by describing the world in the absence of such an action or event. It ponders what would be the situation *but for* that action or event occurring. Since the network sharing agreements are not considered to be “by object” restrictions (if only because of the undeniable efficiencies they customarily deliver), their effects on competition need to be assessed before concluding that they constitute

an infringement of Article 101(1) of the Treaty on the Functioning of the EU¹ (TFEU). Pursuant to the case law, in determining whether an agreement has restrictive effects on competition, it is necessary to consider what the situation would have been in the absence of that agreement.² The Commission’s guidelines on horizontal cooperation agreements,³ or on the application of Article 101(3) TFEU⁴ mention a similar requirement.

The assessment of whether a horizontal co-operation agreement has restrictive effects on competition within the meaning of Article 101(1) must be made in comparison to the actual legal and economic context in which competition would occur in the

- 1 Consolidated version of the Treaty on the Functioning of the European Union, OJ C 326, 26.10.2012, pp. 47–390.
- 2 See, e.g., judgment of the Court of 30 June 1966, *Société Technique Minière (L.T.M.) v Maschinenbau Ulm GmbH (M.B.U.)*, 56/65, EU:C:1966:38, p. 250 (emphasis added): “[t]he competition in question must be understood within the actual context in which it would occur **in the absence of the agreement in dispute**”.
- 3 Communication from the Commission — Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, OJ C 11, 14.1.2011, pp. 1–72 (further referred to as “**Horizontal Cooperation Guidelines**”).
- 4 Communication from the Commission — Notice — Guidelines on the application of Article 81(3) of the Treaty, OJ C 101, 27.4.2004, pp. 97–118 (further referred to as “**Commission 101(3) Guidelines**”), para. 17, stating that (emphasis added) “[t]he assessment of whether an agreement is restrictive of competition must be made within the actual context in which competition would occur **in the absence of the agreement with its alleged restrictions**.”



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absence of the agreement with all of its alleged restrictions (that is to say, in the absence of the agreement as it stands (if already implemented) or as envisaged (if not yet implemented) at the time of assessment).⁵

Comparing the “counterfactual” situation with the actual situation with the agreement in existence allows competition authorities to form a view as to whether that agreement restricts or could restrict competition.⁶ The need to examine the counterfactual scenario is also emphasized specifically in relation to the telecommunications sector. In *O2 Germany*, the General Court annulled the Commission’s decision finding that a roaming agreement in the mobile telephony sector had the effect of restricting competition as it held that the Commission had failed to show what the position would have been in the absence of the agreement, or that the agreement could have restrictive effects on competition.⁷

Hence, the legal standard requires competition authorities to analyse whether any (and if so, which) counterfactual scenario would realistically prevail in the absence of the agreement in view of the various factual and legal case-specifics. Once it identifies such a counterfactual, it should compare the state of competition under the factual situation and under the counterfactual scenario, and demonstrate that the factual situation is worse, from the competition viewpoint (i.e., from the perspective of its impact on key parameters of competition such as price, quantity, and quality of output or innovations⁸), than the counterfactual would have been.⁹ In respect of the network sharing agreements, that means to look at how the key parameters of competition relevant to the examined case, such as network quality, prices or innovation, would be different in the appropriate counterfactual scenario. The failure to conduct a proper counterfactual analysis means that the competition authority failed in discharging its obligation to assess the competitive situation within the actual legal and economic context in which competition would occur in the absence of the agreement.¹⁰

b) Role of counterfactual analysis

A counterfactual analysis is not an end in itself – it plays an important role in the “by effect” analysis, such that its outcome potentially serves as a prerequisite to finding any restriction under Article 101(1) TFEU.

First, it is used to establish the existence of a causal link between the conduct and the alleged restriction of competition. In *O2 Germany*, the General Court observed that “the examination required in the light

⁵ Horizontal Cooperation Guidelines, para. 29, emphasis added.

⁶ Whish, R. and Bailey, D. *Competition Law*, 9th edn (2018) at 134. See also Horizontal Cooperation Guidelines, para. 163.

⁷ Judgment of the Court of First Instance of 2 May 2006, *O2 (Germany) GmbH & Co. OHG v Commission of the European Communities*, T-328/03, EU:T:2006:116 (further referred to as “**O2 Germany**”). It also stressed the importance of the counterfactual scenario in the context of a market undergoing liberalization, or in an emerging market “as in the case of the 3G mobile communications market” (para. 72).

⁸ See, e.g., para. 24 of the Commission 101(3) Guidelines. For the notion of the restriction of competition see generally, e.g., Kindl, J., Munková, J. *Zákon o ochraně hospodářské soutěže. Komentář. [Act on Protection of Competition. A Commentary]* 3rd edn. Prague: C.H. Beck. 2016 at 96-98, or Odudu, O. *The Boundaries of EC Competition Law. The Scope of Article 81*. Oxford: OUP 2016, at 102-103.

⁹ See, e.g., para. 29 of the Horizontal Cooperation Guidelines. See also judgment of the General Court of 12 December 2018, *Krka Tovarna Zdravil d.d. v European Commission*, T-684/14, EU:T:2018:918 (further referred to as “**Krka**”), para. 315, where the General Court observed that “[i]t is therefore necessary to show – by a comparison between the competition that existed when the agreement was in force and the competition that would have occurred if that agreement had not been concluded – that the competitive situation was worse when that agreement was in force”.

¹⁰ See Horizontal Cooperation Guidelines, para. 29. See also *O2 Germany*, para. 68.

of Article [101(1)TFEU] consists essentially in taking account of the impact of the agreements on existing and potential competition [...] and the competition situation in the absence of the agreement [...], those two factors being intrinsically linked”.¹¹ It follows that an infringement of Article 101(1) TFEU can be found only if the negative effects on competition are caused by the agreement in question. The counterfactual analysis serves the competition authority to demonstrate that the alleged restrictive effects are attributable to the network sharing agreement, making it an evaluative instrument of causation.

It follows that where the “but for” situation is not better, from the competition viewpoint, than the factual, the link between the conduct and the alleged restriction (if established) may be missing. For example, where the agreement enables the parties to enter a market that they would otherwise have been unable to, the agreement may not be found to have as its effect a restriction of competition.¹² This was raised, for example, in the *Lundbeck* case, where the General Court held that (emphasis added),

*[i]t has consistently been held that the general criterion for deciding whether an agreement has the object or the effect of restricting competition is how competition would have operated in the market in question in the absence of the agreement. If there is the slightest doubt that competition would have existed in the absence of the agreement that is enough to preclude any infringement of Article 101 TFEU.*¹³

Second, the counterfactual analysis creates a framework for assessing the extent to which the effects of an agreement on competition are appreciable. An agreement can only be restrictive “by effect” if it (emphasis added),

*affect[s] actual or potential competition to such an extent that on the relevant market negative effects on prices, output, innovation or the variety or quality of goods and services can be expected with a reasonable degree of probability. Such negative effects must be appreciable. The prohibition rule of Article [101(1) TFEU] does not apply when the identified anti-competitive effects are insignificant.*¹⁴

By comparing the factual with the counterfactual situation, it is possible to assess to what extent the agreement’s effects on competition are appreciable. Hence, the counterfactual scenario is used as a benchmark against which the factual is compared – the magnitude of the difference between the two scenarios corresponds to the restrictive effects of the agreement in the factual situation.

c) Legal requirements on the counterfactual analysis

Given its crucial role in the “by effects” analysis, stringent requirements have crystallized in the case law and soft law that must be met so that counterfactual analysis can be considered compliant with the EU competition law.

First, the counterfactual analysis must be profound and in-depth so that nuances of the case at hand are well attended to. It does not suffice to conduct a general hypothetical and abstract analysis of a kind of “thought experiment”. This was affirmed in the *Budapest Bank* judgment, where the Court held that (emphasis added),

¹¹ *O2 Germany*, para. 71.

¹² Whish and Bailey, supra note 6 at 612.

¹³ Judgment of the General Court of 8 September 2016, *H. Lundbeck A/S and Lundbeck Ltd v European Commission*, T-472/13, EU:T:2016:449, para. 467.

¹⁴ Commission 101(3) Guidelines, para. 24. See also judgment of the Court of 13 December 2012, *Expedia Inc. v Autorité de la concurrence and Others*, C-226/11, EU:C:2012:795, para. 16 and the case law referred therein.

*an in-depth examination of the effects of [the] agreement should be carried out, as part of which (...) it would be necessary to examine competition had that agreement not existed in order to assess the impact of the agreement on the parameters of competition and thereby to determine whether it actually entailed restrictive effects on competition.*¹⁵

The obligation to conduct an in-depth and through analysis is tightly connected to the next requirement under the applicable legal standard, which is that the counterfactual needs to be realistic. In the *Master Card* judgment, the Court noted that (emphasis added) “[i]t should be pointed out that, irrespective of the context or aim in relation to which a counterfactual hypothesis is used, it is important that hypothesis is **appropriate to the issue it is supposed to clarify and that the assumption on which it is based is not unrealistic**.”¹⁶ This was endorsed in the *Budapest Bank* judgment.¹⁷ A mere speculation, abstract hypotheses, or general statements unrelated to the relevant market realities and factual evidence will be condemned by the EU courts as insufficient to underpin the “by effects” analysis. Thus, in the *European Night Services* case, the General Court considered Commission’s counterfactual analysis insufficient in that it was based on “a hypothesis unsupported by any evidence or any analysis of the structures of the relevant market from which it might be concluded that it represented a real, concrete possibility.”¹⁸

Put differently, a counterfactual has to also be likely in view of specific market realities.¹⁹ As noted in the *European Night Services* case, the analysis of the effects of an agreement requires “account [to] be taken of the actual conditions in which it functions, in particular the economic context in which the undertakings operate, the products or services covered by the agreement and the actual structure of the market concerned.”²⁰ Thus, likely counterfactual may be deduced from the motivation of the parties, their long-term business cases, economic objectives, investment and commercial policies, various market trends and market conditions etc. Finding a realistic counterfactual may also require the competition authority to rely on comparators such as prices or volumes, or economic models that would simulate the likely market outcome that would have occurred without the infringement.

It follows that the analysis cannot be confined to exploring whether, for example, the parties to a network sharing agreement would hypothetically be capable to conduct their businesses separately. It also needs to explore whether, in the absence of the agreement in question, the market developments would lead to a different set of contractual relations and different forms of cooperation between various market players, a change in the competitive position of some players and other developments. For example, it may ponder whether the parties would compete with each other in the absence of the agreement in the future. In the *Master Card* judgment, the Court noted that “it is permissible,

where appropriate, to take account of the likely developments that would occur on the market in the absence of those arrangements.”²¹ Hence, the competition authority needs to take a dynamic approach and consider the events that are likely to happen in the near future.

The failure to perform case-specific analysis, or, in other words, the reliance on an abstract and incomplete counterfactual analysis would compromise the establishment of a causal link between the agreement and the alleged restrictive effects on competition.

Third, a counterfactual needs to be legal in the sense it does not itself constitute an infringement of Article 101(1) TFEU.²² The counterfactual defines a lawful situation in relation to the factual – it must consist of an alternative realistic situation “*absent the restriction*” in the case at hand. Otherwise, it would not be possible to measure the magnitude of the alleged restriction in the factual scenario. Yet, it cannot be too extensive to effectively condemn conduct that would otherwise not be considered restrictive. Making sure that the identified counterfactual is legal is especially important where more counterfactuals are identified, as will be expanded on in chapter IV below.

Finally, the counterfactual analysis needs to be set within the larger picture of the “by effect” analysis. This requires, *inter alia*, that it not only focuses on the potential restrictive effects of an agreement, but also on specific efficiencies it generates. This stems from the obligation to evaluate the “net effects” of an agreement.²³ As a result, efficiencies generated by the agreement in the factual that are to be considered in evaluating the restrictive effects of an agreement also need to be taken into account in the counterfactual analysis.

III. Network sharing as a counterfactual scenario to mergers

The importance of the evaluation in the counterfactual analysis of the positive effects that preclude finding any restriction of Article 101(1) TFEU becomes notable, especially, in view of the Commission’s merger practice. This is because the Commission often uses network sharing as a counterfactual scenario to contemplated mergers.²⁴

In merger decisions, network sharing agreements are generally presented as less restrictive alternatives to mergers. In *Hutchison 3G Italy / WIND JV*, the Commission noted that it

considers that network sharing agreements (including LTE active sharing) are less anticompetitive alternatives compared to similar transactions that result in a market concentration. This

15 Judgment of the Court of 2 April 2020, *Gazdasági Versenyhivatal v Budapest Bank Nyrt. and Others*, C-228/18, EU:C:2020:265 (further referred to as “**Budapest Bank**”), para. 83.

16 Judgment of the Court of 11 September 2014, *MasterCard Inc. and Others v European Commission*, C-382/12 P, EU:C:2014:2201 (further referred to as “**Master Card**”), para. 108. See also *Master Card*, para. 166 where the Court noted that “the scenario envisaged on the basis of the hypothesis that the coordination arrangements in question are absent must be realistic”.

17 *Budapest Bank*, para. 55.

18 Judgment of the Court of First Instance of 15 September 1998, *European Night Services Ltd (ENS) and Others v Commission of the European Communities*, joined cases T-374/94, T-375/94, T-384/94 and T-388/94, EU:T:1998:198 (further referred to as “**European Night Services**”), para. 142.

19 See, e.g., *Master Card*, paras. 108 and 167, where the Court observed in relation to counterfactual that (emphasis added) “the General Court did not in any way address the likelihood, or even plausibility, of the prohibition of ex post pricing if there were no MIF, in the context of its analysis of the restrictive effects of those fees”.

20 *European Night Services*, para. 136.

21 *Master Card*, para. 166. See also *Krka* judgment, which holds that in “by effect” analysis, the Commission must take into account all relevant factual developments since the implementation of the agreement.

22 See Commission 101(3) Guidelines, para. 17 (emphasis added): “The assessment of whether an agreement is restrictive of competition must be made within the actual context in which competition would occur in the absence of the agreement **with its alleged restrictions**.”

23 Pursuant to the *Budapest Bank* judgment, the pro-competitive aspects of an agreement must be considered in order to ascertain the (non-)existence of an infringement of Article 101(1) TFEU. See esp. para. 82, and also paras. 71, 73, and 83 of the *Budapest Bank* judgement. See also judgment of the General Court of 28 May 2020, *CK Telecoms UK Investments Ltd v European Commission*, T-399/16, EU:T:2020:217, para. 279.

24 In merger analysis, the Commission must examine how a concentration might, in the future, alter the factors determining the state of the competition on a market in order to establish whether it would lead to a significant impediment to effective competition and envisage “various chains of cause and effect with a view to ascertaining which of them is the most likely” (judgment of the Court of 15 February 2005, *Commission of the European Communities v Tetra Laval BV*, C-12/03 P, EU:C:2005:87, para. 43 and judgment of the Court of 10 July 2008, *Bertelsmann AG and Sony Corporation of America v Independent Music Publishers and Labels Association (Impala)*, C-413/06 P, EU:C:2008:392, para. 47). In Article 101(1) TFEU cases, a counterfactual analysis retrospectively reconstructs what the past would have been without the allegedly restrictive agreement.

*is because a network sharing agreement would not give rise to an elimination of price competition at the retail or wholesale level given that each party of the agreement would remain in competition with the other party.*²⁵

Network sharing agreements are thus presented as scenarios that would enable similar benefits, yet without the restrictions potentially stemming from a merger, i.e., as a pro-competitive counterfactual to a merger.

The Commission also uses network sharing arrangements as appropriate counterfactual scenarios for assessing merger efficiencies invoked by the parties. In such cases, the benefits of network sharing are often highlighted. In *Hutchison 3G UK / Telefonica UK*, the Commission noted that “network sharing can have pro-competitive effects by achieving cost synergies in the deployment and operation of mobile networks which in turn can enable MNOs to achieve better coverage and higher network quality, promoting effective competition and thereby benefiting consumers and society as a whole.”²⁶ It specifically noted that “[t]he network sharing agreements in place between O2 and Vodafone, on the one hand, and Three and BT/EE, on the other hand, contribute to the competitiveness of the market.”²⁷ The merger, on the other hand, was considered likely to “disrupt the existing well-functioning network sharing agreements in the mobile market in the United Kingdom.”²⁸

As a result of these dynamics between network sharing agreements and mergers, network sharing is oftentimes imposed as a remedy that is meant to remove the concerns of restrictive effects of a joint venture or other forms of economic concentrations. For example, in *Hutchison 3G UK / Telefonica Ireland*, the Commission considered that the termination or frustration of the network sharing as a result of the merger would reduce competition in the retail market, and thus requested commitments in the form of “a strengthened network sharing agreement”²⁹ between competitors, amongst others by including 4G in the technologies covered.

This merger practice highlighting the benefits of network sharing has important implications for the counterfactual analysis in network sharing cases. It implies that network sharing agreements are not comparable to a merger in terms of their effects on competition. Thus, competition authorities shall not, in general, object to network sharing if they would approve the merger between the participating operators. Hence, merger counterfactuals may provide useful benchmark (“safe harbour”) against which network sharing agreements may be assessed in the sense that competition authorities shall not challenge network sharing agreements where they would approve a merger between the sharing partners but that does not mean that a network sharing arrangement outside such a “safe harbour” would be problematic from the competition viewpoint. As said, it is recognised as a less restrictive alternative to a merger and an arrangement that brings many pro-competitive benefits. That now turns our attention to challenges of the counterfactual analysis in network sharing cases.

IV. Challenges to counterfactual analysis in network sharing cases

The complexity of the considerations involved in the evaluation of effects of network sharing agreements may require the identification of several different counterfactuals. These may differ depending, *inter alia*, on the technology generations covered by network sharing (i.e., 2G, 3G, 4G, or 5G), the territorial span of the network sharing (i.e., whether it

covers the entire national territory, or the entire national territory with certain areas excluded or some selected areas only), or the form of network sharing (e.g., sharing of passive or active equipment, sharing of radio access network or core, frequencies, national roaming etc.). Those properties may be further combined, leading to different theoretically conceivable permutations of technology generations covered, territorial spans, and forms of sharing. Examples of such permutations may include sharing of 2G/3G passive elements in the entire territory, or in a more limited territorial extent, or as case-by-case and disparate cooperation (e.g., site co-location). A different example may be 4G active sharing in the entire territory as compared to sharing in selected areas only.

In sum, there is a plethora of potential variations in which network sharing may be structured. This implies that there may also be a plethora of potential counterfactual scenarios against which the factual might be compared. Accordingly, competition authorities may get to the situation when there would be a tension between the imperative “get the case right” and the practicability or the feasibility of the proper counterfactual scenario. Since competition law operates within the broader framework of the principles such as the “rule of law” (or *Rechtsstaat*), the presumption of innocence and the respect for private (contractual) autonomy, the imperative to “get the case right” should prevail, i.e., unless the competition authority can show on the basis of cogent and consistent evidence that there is a non-restrictive realistic counterfactual to the allegedly restrictive (network sharing) factual scenario, it shall not condemn the factual scenario under Article 101(1) TFEU.

a) Need to perform separate counterfactual analysis in relation to all counterfactual scenarios

In that regard, a competition authority is allowed to work with more counterfactuals in relation to one factual, but this has important consequences for the “by effects” analysis it needs to perform under Article 101(1) TFEU. First, a separate comprehensive counterfactual analysis needs to be conducted in relation to each of those counterfactuals. This entails ascertaining how competition would have evolved in each of the identified counterfactuals (esp. with regard to its impact on the important parameters of competition identified in the case, such as quality, prices etc.). This also includes making sure that the situations identified as counterfactuals are realistic. That kind of analysis needs to be comprehensive in the sense that the alleged restrictive effects and “net effect” benefits of the factual would be tested against the appropriate counterfactual. Where the competition authority identifies more counterfactual scenarios but performs only one “*mélange* type” analysis in relation to the factual, this results in an inconsistent mix of the alleged restrictions assessed against the background of different counterfactuals, which prevents identification of a clear scope of the alleged restriction.

b) Need to ensure that the counterfactuals are compatible

Indeed, the competition authority needs to be aware that each of the counterfactuals may imply a different scope of network sharing as potentially restrictive (i.e., implying a different extent of the potential restriction). Consequently, the appreciability of the alleged anticompetitive effects flowing from the factual will also differ according to the counterfactual scenario chosen. Hence, a standalone counterfactual³⁰ as a benchmark might lead to a greater scope of possible restrictive effects on the market, and in turn, also to a greater scope for efficiencies stemming from the network sharing, as compared to nationwide active sharing factual. Where passive sharing is taken as a counterfactual, the appreciability of the alleged effects on the market might be more limited. Under, e.g., a more geographically limited active sharing counterfactual, the appreciability may be reduced even further.

25 M.7758 – Hutchison 3G Italy / WIND JV, para. 1623. The case involved 3G/4G MOCN (i.e., multi-operator core networks sharing) and 2G national roaming agreement in Italy.

26 M.7612 – Hutchison 3G UK / Telefonica UK, para. 1229. The case involved nationwide RAN sharing joint venture in the United Kingdom.

27 Hutchison 3G UK / Telefonica UK, para. 1175.

28 Hutchison 3G UK / Telefonica UK, para. 1187.

29 M.6992 – Hutchison 3G UK / Telefonica Ireland, para. 1009. The case involved nationwide RAN sharing JV in Ireland.

30 This refers to each of the potential network sharing parties deploying their own network separately of each other.

For illustration, where 4G active network sharing is identified as potentially restrictive as compared to non-restrictive 4G passive network sharing, the scope of the restriction would correspond only to restrictive effects of sharing of 4G active elements, and not passive as well. And, hence, the potentially restrictive effects that are linked with the sharing of the passive infrastructure shall not be taken to the detriment of the assessed active sharing on the basis of a comparison with a possible standalone counterfactual. Such an approach would correspond to the abovementioned “*mélange type*” analysis or the regulatory “cherry-picking” in the sense that the competition authority would illustrate the alleged restrictive effects stemming from sharing the passive infrastructure (comparing that with a non-restrictive counterfactual) but would also reject claimed benefits of active sharing (e.g., faster roll-out, better network quality ect.) based on the comparison with a passive sharing counterfactual. In other words, the competition authority “cannot eat the cake and still have it”. Either it is of the view that the passive sharing is a non-restrictive counterfactual scenario in which case it shall focus on the “incremental” restrictive effects as well as benefits associated with the active sharing factual scenario, or it is of the view that the non-restrictive counterfactual scenario is a standalone counterfactual in which case it shall test the restrictive effects and benefits associated with the sharing as such (both passive and active). It can test both of those alternatives within one case, but it shall not mix them up.

The foregoing implies that the counterfactuals identified need to be compatible with each other, i.e., that one counterfactual does not constitute a restriction of competition under another counterfactual. This stems from the above requirement that a counterfactual scenario needs to be legal. For example, where the standalone scenario is defined as the only non-restrictive counterfactual, any network sharing agreement would be viewed as incompatible with Article 101(1) TFEU. If passive network sharing is identified as a second counterfactual, only active network sharing would be deemed unlawful. Thus, the first and the second counterfactuals are not compatible with each other, because the second counterfactual constitutes a restriction of competition under the first counterfactual. This would violate the legal requirements laid on counterfactuals explained above, esp. the requirement that a counterfactual has to be legal (i.e., it itself cannot violate Article 101(1) TFEU). Where the counterfactuals are incompatible, the scope of the alleged restriction of competition under the factual cannot be properly ascertained, as some aspects of the network sharing may be regarded as legal or illegal, depending on the counterfactual chosen.³¹

It follows that, in the end, a single scope of the alleged restriction associated with the factual needs to be identified. This is because the restrictive effects of the network sharing need to be identified precisely. As a result, where more counterfactuals are identified, the competition authority needs to make sure that all consider the same scope of effects as restrictive. That would allow that the outcome of the comparison of each counterfactual and factual, if negative, corresponds to the same alleged restriction. Alternatively, the competition authority needs to establish which of the potential scenarios is the most likely to constitute the relevant counterfactual and then to establish the scope of the restriction based on that.³² Where it fails to do so and where each

counterfactual implies a different scope of restriction, the precise scope of restriction of the factual scenario cannot be clearly ascertained. This would constitute a fundamental flaw of the “by effects” analysis.

c) *Need to identify realistic counterfactuals*

Another challenge linked with the counterfactual analysis in network sharing cases is the requirement that the identified counterfactual needs to be realistic. Indeed, the possibility of identifying numerous counterfactuals entails an increased risk of considering as a counterfactual a scenario that is only hypothetical and not realistic. However, as explained above, the counterfactual analysis needs to be case-specific. A general hypothetical and abstract analysis does not suffice. This is because where one hypothetical scenario may be realistic under certain market conditions and state of affairs, it is not necessarily realistic in a different market and commercial environment.

For example, although the parties to a network sharing agreement may have hypothetically refrained from entering into an agreement in the first place (thus making the standalone a theoretically possible alternative scenario to the network sharing), this does not automatically imply that standalone scenario shall serve as a counterfactual in a given case. This is because the market realities at the time of the conclusion of the agreement and during its implementation were such that a standalone arrangement would be highly unlikely.

Thus, in consideration of the standalone scenario as a potential counterfactual, the competition authorities may need to take into account that, for example, network sharing is a widespread practice. Its proliferation, not only across Europe, may suggest that it is indeed a standard arrangement in mobile telecommunications sector, which is highly likely to occur in many markets. Also, competition authorities may need to factor that there may be technological limitations to standalone scenarios. For example, a specific topology of a country and prevalence of rooftop sites as opposed to towers may defy the possibility of installing two sets of passive and active equipment. Also, commercial considerations such as the increased costs or negative impact on customer experience as a result of interferences between the equipment of non-sharing mobile network operators, need to be taken into account.

Similarly, some of the above considerations may also be relevant in considering, e.g., the passive sharing scenario as a potential counterfactual. In particular, the scarcity of nationwide passive sharing in EU may suggest that this scenario may not be that attractive to potential sharing parties. It may be because the implementation of passive sharing on a nationwide scale would not be technically and economically viable if not accompanied by some form of active sharing. In the absence of sharing part of the active network equipment, there may be technical issues similar to the above standalone scenario. These may include technical limitations, such as limited space or weight limitations to install additional equipment; regulatory limitations, such as a requirement to obtain (additional) building permits; or commercial limitations, such as the impossibility to recoup the investment as a result of high costs

the view that sharing of passive infrastructure is a non-restrictive realistic counterfactual (in the sense that on the basis of the “net effects” analysis mentioned in the *Budapest Bank* case it is positive rather than negative from the competition viewpoint), then it shall forget the standalone counterfactual and concentrate on the incremental restrictive effects and benefits associated with the additional elements of the sharing, i.e., the sharing of active parts of the infrastructure. Should it, however, come to the view that the only realistic counterfactual is a standalone scenario, then it shall assess the restrictive effects and benefits of the sharing as such as compared to that standalone scenario.

31 One may argue that in such situations, the most restrictive counterfactual scenario dismisses the other less restrictive (or not restrictive at all) scenarios, which are *a fortiori* permissible. Yet, this reasoning does not alter the conclusion that the competition authority failed to clearly state the applicable counterfactual against which the alleged restriction of competition is to be measured.

32 To take the above example, should the competition authority come to

of deployment met with lower efficiencies. The doubling of active equipment may also result in shadowing effects of antennas, leading either to the deterioration of the quality of the network or inciting the need for further coordination as regards the tilting of antennas to avoid potential deterioration. As a result of these limitations, mobile network operators who share their passive networks also usually enter into some form of active sharing. This avoids creating hybrid sites that would trigger the need for enhanced coordination, but without allowing for optimal network capabilities. Competition authorities need to bear all those factors in mind when establishing a passive sharing counterfactual as a realistic and most likely scenario.

Finally, where a factual is the active network sharing, competition authorities may hypothesize whether, e.g., some more limited type of active network sharing (limited, for example, by technological or territorial scope) may constitute a realistic counterfactual. Any such analysis shall meticulously evaluate what the likely effects the exclusion of some technology(ies) or territory(ies) from sharing is about to bring. For example, exclusion of certain territories may lead to the so-called "Swiss Cheese" effect, which refers to technological and operational complexities as a result of excluding many small areas from the larger shared network. Such an exclusion may give rise to handover issues, especially between the shared and non-shared parts of the networks. The border areas between shared and non-shared parts of the network created as a result of the exclusion of many small areas are more prone to major interferences, which may result in deteriorated network quality. Hence, the competition authority shall recognize that these limitations may render geographically limited active network sharing not a realistic and viable option for potential sharing parties as opposed to nationwide network sharing.

The path dependence may also play an important role in devising potential realistic counterfactual scenarios. For example, the pre-existing shared common grid on 3G between the network sharing parties influences the decision whether it will be used to install the shared 4G equipment. In other words, sharing of legacy technology necessarily influences the decision of the sharing parties as regards the potential sharing of future technologies. This, in turn, shall inform the decision of the competition authority in regard to the identification of a

realistic counterfactual, as compared to a situation, for example, where there was no prior sharing between the sharing parties at all.

Finally, in devising a realistic counterfactual, it should be kept in mind that the competition authority shall not second guess business judgments of the parties.³³ Hence, the competition authority shall not challenge the conduct of the parties on the basis of its mere belief that such conduct is not that commercially wise compared to some other hypothetical conduct that the competition authority would prefer. It would have to show (on the basis of cogent, consistent, and convincing evidence) that there were objectively available realistic options of an alternative conduct that would not bring about the alleged restrictions but would bring similar benefits.

V. Conclusion

As shown above, the complexity of network sharing arrangements presents challenges for their evaluation under competition law. Yet, such complexity cannot be used as an excuse from conducting a thorough examination of the situation that would have existed in the absence of such arrangements. As in other competition law cases, the counterfactual analysis in network sharing cases needs to take into account relevant market realities and identify, in view of those realities, a realistic counterfactual scenario that would most likely prevail. Where more such scenarios are identified as a result of the complex market and business conditions, separate analyses comparing comprehensively each counterfactual with the factual and assessing the magnitude of the restriction under each counterfactual need to be performed. This also implies that where the competition authority builds its case on more realistic counterfactuals, these need to be compatible so that one counterfactual does not represent a restriction of competition under a different counterfactual. In the end, the precise scope of restriction associated with the factual needs to be identified. Only then will the counterfactual analysis allow the competition authority to conclude whether or not the agreement in the factual situation restricts or is likely to restrict competition in terms of Article 101(1) TFEU. That is, however, not the end of the story. Then the analysis under Article 101(3) TFEU comes into play. But that would be a theme for another article.

³³ See Commission 101(3) Guidelines, para. 75.

Will the new generation of networks face stricter competition law enforcement?*

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Abstract This paper addresses the question whether there is a good reason to expect stricter or more frequent scrutiny of the sharing of mature 5G networks from the viewpoint of competition law. First, it discusses how new networks may change the investigation of competitive concerns related to network sharing. Second, it analyses some of the recent developments in the case law of EU courts, namely a possible comeback of the ‘more economic approach’ and the emergence of clearer rules regarding the standard of proof underpinning the theories of harm. It is proposed that there is no clear reason for a stricter or more frequent scrutiny of mature 5G network sharing that could be derived from the expected features of these networks or the broader context of the current development in EU competition law.

Key words mobile network, 5G networks, law enforcement

Network sharing agreements of various kinds are not uncommon among European mobile network operators. Depending on their set up, they can ease network deployment or allow for a better environment. On the other hand, network sharing agreements can prove to be anticompetitive. This article deals with the question how likely are the new 5G networks to stand in face of competition law enforcement.

Since the broader introduction of mobile telephony in the 1980s, mobile networks have developed gradually. Starting with the ability to transmit voice calls, networks would start to allow sharing of text messages (2G), broadband wireless data (3G),¹ high definition video (4G)² and, with the introduction of 5G, possibly enable further development of the internet of things and other novelties.³

The European Commission (“the Commission”) made it clear as early as in 2016 that timely deployment of 5G networks throughout the EU is one of its policy goals.⁴ As recently as September 2020, the Commission published a recommendation regarding the introduction of 5G networks.⁵ Alas, this recommendation, and no other piece of Commission guidance known to me, talks about the possible competition concerns linked to these kinds of networks.

On the level of decision making, the Commission has recently cleared a concentration entailing sharing of older networks as well as a joint rollout of 5G on the Italian market subject to commitments

proposed by the parties.⁶ In relation to 4G and older generations on the other hand, the Commission has sent a statement of objections to O2, T-Mobile and CETIN, the first two being Czech mobile operators and CETIN being a telecom infrastructure provider. The undertakings in questions were supposed to engage in an alleged breach of Art. 101 TFEU because of a network sharing agreement concerning 2G, 3G and 4G networks and covering most of the Czech territory.⁷

Guidance as to competitive concerns related to network sharing on part of the Commission is thus fairly limited. At the same time, there are questions worth exploring in this respect. For example, some expected features of new 5G networks, like network densification linked to the usage of new high-frequency spectrum bands, may require considerably more intensive equipment sharing between mobile operators.⁸ Furthermore, 5G networks are supposed to introduce interesting new functionalities and changes discussed below, that may themselves impact competition between mobile operators.

In reaction to the relatively sparse explicit Commission guidance regarding 5G networks and the currently running investigation of network sharing in Czechia, Damien Geradin and Theano Karanikioti go as far as to say that this is a case of a policy mismatch, that may stifle the Commission’s otherwise desired goal of a speedy European 5G deployment due to the uncertainty it may introduce.⁹ The purpose of this contribution thus is to discuss possible new competitive concerns introduced or exacerbated by the expected traits of 5G networks. Put shortly, is there really a reason for added uncertainty *in comparison* to sharing of older generations of networks? In connection to this question, I will propose a descriptive estimate of the expected development of EU competition policy *vis à vis* 5G network sharing.

I will first discuss the different technological phenomena that can

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1 GUPTA, P. Evolution of mobile generations: 1G to 5G. *International Journal for Technological Research in Engineering*. 2013, Vol. 1, pp. 152–157.
2 YADAV, R. Challenges and evolution of next generations wireless communication. *Proceedings of the International MultiConference of Engineers and Computer Scientists*. Hong Kong: IAENG, 2017, pp. 619-623.
3 ARSHAD, Q., A. KASHIF and I. QUERSHI. A review on the evolution of cellular technologies. *2019 16th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*. Islamabad: IEEE, 2019, pp. 989–993.
4 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.
5 Commission recommendation of 18 September 2020 on a common Union toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum, to foster connectivity in support of economic recovery from the COVID-19 crisis in the Union. C(2020) 6270 final.

6 Commission decision of 6 March 2020 in case M.9674, C(2020) 1573 final.

7 Case AT.40305, currently pending before the Commission.

8 REBATO, M., M. MEZZAVILLA, S. RANGAN and M. ZORZI. Resource sharing in 5G mmWave cellular networks. *2016 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)*. San Francisco: IEEE, 2016, pp. 271–276.

9 GERADIN, D. and T. KARANIKIOTI. *Network Sharing and EU Competition Law in the 5G Era: A Case of Policy Mismatch* [online]. SSRN Scholarly Paper. ID 3628250. Rochester, NY: Social Science Research Network. 2020 [ast visited on 8 November 2020]. Available at: doi:10.2139/ssrn.3628250. The authors disclose that they represent O2 in the relevant proceedings.

hide under the notion of 5G networks and, second, make a conjecture about the competition law implications of the sharing of these networks. Third, I will discuss the developments of the case law of the Court of Justice and the General Court in the area of competition and state aid. I will conclude by proposing a descriptive forecast of the competition enforcement's reaction to the introduction of 5G networks.

What is a 5G network?

Put shortly, the abbreviation '5G' may stand for various kinds of mobile networks. In order to refrain from turning this contribution into a layman's discussion of network-engineering, I will merely refrain to three aspects that are commonly mentioned in relation to 5G networks. These are, namely, the frequency used, the distinction between standalone and non-standalone deployment and the expected usage of the network.

Regarding the frequency, three frequency bands have been allocated to 5G networks on the EU level. Namely, 694-790 MHz,¹⁰ 3.4-3.8 GHz¹¹ and 24.25-27.5 GHz.¹² This is not just an economic question of distributing frequencies as a scarce resource. The frequency used is linked to the network's physical properties. For example, especially the lowest 700 MHz band is not that far from some frequency bands apportioned for 4G networks.¹³ On the other hand, the 26 GHz band has appreciably different physical properties. Namely, the signal may not be able to pass well through walls and other obstacles,¹⁴ thus requiring a much denser network.

Regarding the difference between standalone and non-standalone deployments, only standalone networks will be based on a 5G core. Non-standalone networks, on the other hand, will use 5G radio while functioning on top of a core based on an earlier generation of technology. Put shortly, many new expected functionalities of 5G networks can only apply to standalone deployments that can fully exploit the promises of the newly introduced technologies.¹⁵

Finally, as concerns the expected functionalities of the networks, at least three areas were identified where 5G networks should be put to use. These are Enhanced Mobile Broadband ('eMBB'), Ultra Reliable Low Latency Communications ('URLLC'), and Massive Machine Type Communication ('mMTC'). Currently deployed networks entail the eMBB functionality. This means faster mobile internet, practically speaking. URLLC and mMTC provide highly reliable and low latency communication services and the capability to connect a large number of devices respectively. They are not currently available for commercial use.¹⁶ At the same time, many features linked to the promised features of

5G networks rely on these technologies. URLLC and mMTC should in fact enable further development of the internet of things.¹⁷

As appears clear from the above categorizations, the term '5G networks' in fact covers a swath of technological solutions and functionalities. For the sake of simplicity, this categorization is simplified to a distinction between early and mature 5G, as has been done by Zolán Pápai and others.¹⁸ Early 5G networks are those that operate in lower frequency bands, are non-standalone deployments that only provide eMBB. On the other hand, the term mature 5G refers to standalone deployments that include high frequency bands and provide the full range of expected services. The emerging 5G networks we are witnessing thus better fit into the 'early' category, while 'mature' networks describe our expectations about the networks that may come in a few years' time.

Are there any new competition concerns linked to the sharing of 5G networks?

This paper deals with mature networks. Although the question of competition concerns linked to early networks is by no means simple, the issues linked to them will be very similar to those we are currently experiencing with older generations of networks, essentially by definition.¹⁹ The same is not that certain about mature networks. The work of Zoltán Pápai and others mentioned above provides a great discussion of competition concerns linked to 5G network sharing from a normative point of view and, to my knowledge, provides their most comprehensive account yet.²⁰ I do not strive to challenge or supplement their findings in this respect. Rather, I would like to make a descriptive argument about the expected development of an empirically observable reaction of competition enforcement to the sharing of mature 5G networks, hopefully shedding more light on how warranted are the concerns that the absence of guidance may contribute to a stifling policy mismatch, as proposed by Damien Geradin and Theano Karanikioti.

Before presenting the conclusions of current literature on the question of mature 5G network sharing, I will note that there seem to be two analytical distinctions of network sharing for the purposes of regulatory and/or competition law assessment. The first one is functional, looking at what parts of the network tend to be shared. In this sense, operators may decide to share passive (like locations or masts) or active (like transmitters, receivers etc.) infrastructure. If the sharing agreement covers active infrastructure, the operators often choose to share the radio access network in form of multi-operator radio access network sharing ('MORAN'), that only involves equipment sharing. Furthermore, the frequencies can be shared through multi-operator core network sharing ('MOCN'). Of course, the core network can be shared as well.²¹ The last form of sharing mentioned does not

10 Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017 on the use of the 470-790 MHz frequency band in the Union, OJ L 138, 25. 5. 2017, pp. 131–137.

11 Commission Implementing Decision (EU) 2019/235 of 24 January 2019 on amending Decision 2008/411/EC as regards an update of relevant technical conditions applicable to the 3400-3800 MHz frequency band, C/2019/262, OJ L 37, 8 February 2019, pp. 135–143.

12 Commission Implementing Decision (EU) 2019/784 of 14 May 2019 on harmonisation of the 24,25-27,5 GHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services in the Union, OJ L 127, 16 May 2019, pp. 13–22.

13 In Czechia, these are the 800 MHz, 1.8 GHz, 2.1 GHz and 2.6 GHz bands.

14 RAPPAPORT, T. S., S. SUN, R. MAYZUS, H. ZHAO, Y. AZAR, K. WANG, G. N. WONG, J. K. SCHULZ, M. SAMIMI and F. GUTIERREZ. Millimeter Wave Mobile Communications for 5G Cellular: It Will Work! *IEEE Access* [online]. 2013, vol. 1, pp. 335–349. ISSN 2169-3536. Available at: doi:10.1109/ACCESS.2013.2260813.

15 PÁPAI, Z., A. MCLEAN, P. NAGY, G. SZABÓ and G. CSORBA. The impact of network sharing on competition: the challenges posed by early versus mature 5G. *International Telecommunication Society Conference 2020*. Calgary: International Telecommunications Society (ITS), 2020.

16 PÁPAI, Z., A. MCLEAN, P. NAGY, G. SZABÓ and G. CSORBA. Op. cit. sub 15.

17 WAN, L., Z. GUO, Y. WU, W. BI, J. YUAN, M. ELKASHLAN and L.

HANZO. 4G\5G Spectrum Sharing: Efficient 5G Deployment to Serve Enhanced Mobile Broadband and Internet of Things Applications. *IEEE Vehicular Technology Magazine* [online]. 2018, Vol. 13, No. 4, pp. 28–39. ISSN 1556-6080. Available at: doi:10.1109/MVT.2018.2865830

18 PÁPAI, Z., A. MCLEAN, P. NAGY, G. SZABÓ and G. CSORBA. Op. cit. sub 15.

19 PÁPAI, Z., A. MCLEAN, P. NAGY, G. SZABÓ and G. CSORBA. Op. cit. sub 15.

20 Understood here as the 'normative method' of legal research. See BOBEK, M. Výzkum v právu: reklama na Nike anebo kvantová fyzika? *Jurisprudence*. 2016, Vol. 4, No. 6, pp. 3–10.

21 This is roughly the distinction presented by the BEREC 2019 survey, *BEREC Common Position on Mobile Infrastructure Sharing*, available at https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/8605-berec-common-position-on-infrastructure-_0.pdf. There are further specific scenarios like national roaming or mobile virtual operators, these are not discussed here for the sake of brevity.

seem to be a widely used option though, at least historically speaking.²² This distinction seems practical for categorizing different intensities of cooperation and is sometimes used by regulators and competition authorities to make more general statements about admissibility of certain kinds of sharing. For example, it would seem that some agencies are generally more willing to accept passive infrastructure sharing as benign, competition-wise.²³ This distinction, though practical, does not seem to be readily and directly translated into normative considerations of competition law, which form the second observable kind of distinction.

Admittedly, there is no explicit Commission soft law document discussing competition concerns linked to mobile network sharing. This does not imply a complete lack of guidance, of course. Instead, the Commission's guidelines on horizontal cooperation agreements are used as the most relevant piece of guidance.²⁴ Formally speaking, network sharing agreements can be understood as production agreements and are often analysed as such. This is done e.g. by Zoltán Pápai and others,²⁵ but also both by the Czech Telecommunications Agency and BEREC positions quoted above. This distinction provides clearer normative assessment for discussing network sharing agreements from the vantage point of competition law.

Along these lines, Zoltán Pápai identified theories of harm that may undergo the most changes in qualification *vis à vis* 5G networks, namely a possible decrease in the parties' ability and incentive to differentiate, tacit collusion caused by cost commonality or a restriction of downstream competitors' access to key inputs. More generally and quite crucially though, the authors find identified competitive concerns hard to substantiate or even less problematic in comparison to 4G networks.²⁶ This is at least partly caused by the higher factual complexity scenarios to be expected to arise in relation to 5G. To quote some of the factors discussed by Pápai and others, mature 5G will likely lead to a high degree of network densification,²⁷ thus increasing the incentives to share as well as societal and/or environmental costs of not sharing the network. Functionalities like mobile edge computing may effectively bring some of the network's core functionalities to the edge of network,²⁸ thus possibly calling into question even some of the currently applied categorizations of mobile networks discussed above. Lastly, the so-called network slicing may allow for more differentiation within one network.²⁹

A simple conclusion can be drawn from these considerations. Whether more or less prone to possible anticompetitive effects on balance, mature 5G network sharing could likely come in more shapes and varieties, thus increasing the factual complexity of any related inquiry by a competition authority. Thus, I am sceptical to the idea that any currently known distinctive feature of 5G networks could lead to more regulatory actions towards sharing agreements concerning these networks.

How can the current development in EU competition law bare on future investigations of future 5G network sharing?

Another factor to consider is the overall development of competition law enforcement. I mainly focus on two phenomena. First, the question of the so-called 'more economic approach' to competition law and, second, the development in the standards of proof in the EU courts' case law. I distinguish the two phenomena along the lines described by Andriani Kalintiri, the more economic approach is essentially a description of the nature of the theories of harm applied, while the standard of proof pertains to the required quality of evidence that underpins them.³⁰

Firstly, regarding the more economic approach, the term is used to describe an effort to apply theories of harm more firmly grounded in economic theory (loosely speaking). The discussion of this topic was partly fuelled by the Commission's reformatory efforts that largely took place during the 2000s³¹ and seems to have recently had a comeback in academic literature. It is linked to ideas like focusing on the analysis of anticompetitive effects rather than focusing on the formal elements of a conduct or analysing the harmfulness of a conduct from the viewpoint of consumer welfare. After the Commission seemed to have partly backed up with some of its efforts in this area and the EU courts were rather conservative in their assessment of the legal implications of the Commission's relevant soft law regarding abuse of dominance,³² a sceptical view of the relevance of such a new economic approach may have been warranted. After a series of more or less recent decisions in cases like *MEO*³³, *Cartes Bancaires*³⁴ or *Intel*,³⁵ some commentators once again discuss the embracement of some of the principles of the new economic approach by the Court of Justice.³⁶ Should this be the case, the higher factual complexity of 5G network sharing cases would likely translate more directly into the demandingness of related investigations, save, possible cases of object restrictions.

Secondly, there have been some recent new developments in the case law specifying the required standard of proof and rules on handling evidence in competition cases. In direct relation to network sharing, the General Court has recently specified in the context of merger control, that the Commission has to produce evidence that indicates a

22 STACEY, O. Network sharing business models and the structuring issues and choices facing operators. *Journal of Telecommunications Management*. 2011, Vol. 3, No. 4, pp. 306–312. ISSN 17541662.

23 See for example the overview presented in the opinion of the Czech Telecommunications Office, *Stanovisko Českého telekomunikačního úřadu ke sdílení sítí 2G, 3G a 4G*, Available at https://www.ctu.cz/cs/download/aktualni_informace/stanovisko_ctu_sdileni-siti_2g-3g-4g_04_09_2015.docx.

24 Communication from the Commission — Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, OJ C 11, 14 January 2011, pp. 1–72.

25 PÁPAI, Z., G. CSORBA, P. NAGY and A. MCLEAN. *Competition policy questions in mobile network sharing* [online]. Calgary: International Telecommunications Society (ITS). 2018 [last visited on 14 November 2020]. *29th European Regional ITS Conference, Trento 2018*. Available at: <https://ideas.repec.org/p/zbw/itse18/184960.html>.

26 PÁPAI, Z., A. MCLEAN, P. NAGY, G. SZABÓ and G. CSORBA. Op. cit. sub 15.

27 REBATO, M., M. MEZZAVILLA, S. RANGAN and M. ZORZI, op. cit. sub 8.

28 HU, Y., M. PATEL, D. SABELLA, N. SPRECHER and V. YOUNG. Mobile edge computing—A key technology towards 5G. *ETSI white paper*. 2015, Vol. 11, No. 11, pp. 1–16.

29 ZHANG, H., N. LIU, X. CHU, K. LONG, A. AGHVAMI and V. CM LEUNG. Network slicing based 5G and future mobile networks: mobility, resource management, and challenges. *IEEE communications magazine*. 2017, Vol. 55, No. 8, pp. 138–145.

30 KALINTIRI, A. *Evidence Standards in EU Competition Enforcement: The EU Approach*. Oxford: Hart Publishing, 2019, p. 203. ISBN 1-5099-1966-X.

31 RÖLLER, L.-H. and O. STEHMANN. The year 2005 at DG competition: The trend towards a more effects-based approach. *Review of Industrial Organization*. 2006, Vol. 29, No. 4, pp. 281–304.

32 JONES, A., B. SUFRIN and N. DUNNE. *EU Competition Law*. Oxford: Oxford University Press, 2019, p. 297. ISBN 978-0-19-882465-7.

33 Case C-525/16, *MEO*, ECLI:EU:C:2018:270.

34 Case C-67/13 P, *Cartes Bancaires*, ECLI:EU:C:2014:2204.

35 Case C-413/14 P, *Intel v Commission*, ECLI:EU:C:2017:632.

36 WITT, A. The European Court of Justice and the More Economic Approach to EU Competition Law—Is the Tide Turning? *The Antitrust Bulletin*. 2019, Vol. 64, No. 2, pp. 172–213. See also COLANGELO, G. and M. MAGGIOLINO. Intel and the Rebirth of the Economic Approach to EU Competition Law. *IIC - International Review of Intellectual Property and Competition Law* [online]. 2018, Vol. 49, No. 6, pp. 685–699. ISSN 2195-0237. Available at: doi:10.1007/s40319-018-0723-1.

strong probability of a significant impediment to effective competition. Evidence satisfying this standard should be stronger than a 'balance of probabilities' approach but does not have to satisfy a 'beyond all reasonable doubt' standard.³⁷ The aim of the General Court seems to be to prevent a too much of a loose threshold to be applied. In the judgement, it stresses the necessity to exercise 'great care' in relation to *ex ante* merger analysis.³⁸

Also rather recently, the way the Commission is supposed to handle evidence and counterevidence was clarified in the area of fiscal state aid. For example, the General Court annulled the Commission's decision in *Barcelona* because, in essence, it allegedly did not deal satisfactorily with all the evidence that was made available to it during the administrative proceedings.³⁹ Admittedly, this judgement was annulled on appeal. The annulment decision's reasoning seems to lie in the *ex ante* nature of the assessment of aid schemes which should not require reliance on data gathered *ex post* that would indicate how and if the advantage in question materialized.⁴⁰ Although this is certainly important for cases of unnotified aid schemes, I believe the judgement aims more at the temporal viewpoint of the analysis rather than at the substantive threshold it is supposed to apply.

Of course, the considerations above relate to general paradigmatic shifts in relation to the substantive aspects of the theories of harm applied in competition law or the more procedural questions of the evidence underpinning them. Given their magnitude and generality, it is rather difficult to make predictions about the results of such large-scale changes when one finds oneself in their middle. This being said, I put forward a cautious proposition that the current standards of court review do not seem to allow for a significant shift towards activism in

competition law enforcement. In some areas, the standards of review may even become stricter.

Conclusion

There are at least two important factors to consider when one asks about the competition law enforcement of mature 5G network sharing. The first one is the nature of the networks itself, the other one deals with the overall development in the area of EU competition law. I argue that, first, mature 5G networks can be expected to introduce more complexity and perhaps even cast doubt on some current ways of discussing network sharing. At the same time, I am not aware of any specific feature of the new networks that would raise distinct and unambiguous competitive concerns in relation to their sharing.

Second, on the front of the more general developments in court review of the Commission's decisions, some tendencies seem to point to the EU courts' willingness to scrutinize the theories of harm reflecting the 'more economic approach' as well as to its tendency to continue setting robust requirements regarding proof underpinning these or any other theories of harm. To say the very least, these developments seem to indicate that any increase in the sheer volume of enforcement would be just as costly as it is now or even costlier to make a case that could hold water in court.

Taken together, these two factors lead me to a conclusion that even in the absence of explicit guidance provided by the Commission, there currently do not seem to be legal or factual reasons that would indicate that mature 5G networks would be subject to comparatively stricter or more frequent investigation. Of course, there may exist political reasons for taking such steps, but this would indeed seem to be a case of a true policy mismatch.

37 Case T-399/16, *CK Telecoms UK v Commission*, ECLI:EU:T:2020:217, para 118.

38 *Ibid.*, para 112.

39 Case T-865/16, *FC Barcelona v Commission*, ECLI:EU:T:2019:113, para 66. Notably, AG Pitruzzella has recently proposed to annul this judgement on appeal. His reasoning seems to lie in the *ex ante* nature of the assessment of aid schemes which should not require reliance on data gathered *ex post* that would indicate how and if the advantage in question materialized (Opinion of AG Pitruzzella in Case C-362/19 P, *Commission v FC Barcelona*, ECLI:EU:C:2020:838, para 83). Although this opinion raises interesting questions regarding *ex ante* review, the main thrust of the argument seems to aim at a substantive threshold (i.e., *what* ought to be proven, not *how*).

40 Case C-362/19 P, *Commission v FC Barcelona*, ECLI:EU:C:2021:169.

Geographical Scope of Mobile Network Sharing: *Prima Facie* and Ordinary Compliance with EU Competition Law

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Abstract The European Commission stated in its recent two cases that network sharing (esp. active) in urban areas, such as big cities or larger agglomerations, poses a competition concern. The information on those cases is only limited at the moment but it seems that, at least to some extent, they aim at ensuring *prima facie* compliance with competition law which, as this article argues, is not entirely appropriate. The competition concern with urban areas has been more elaborately discussed in earlier guidelines issued by several authorities of EU Member States, mostly in the context of telecommunications regulation. The main lines of arguments include the presumed restriction of infrastructure competition, lower cost savings or other benefits in urban areas compared to rural ones, and extensive information exchange in urban areas. Based on those assumptions, the regulators suggest either more cautious scrutiny of urban areas, or even a prohibition of sharing in those areas. The concerns expressed in the guidelines are, however, not shared entirely across the telecommunications industry by the stakeholders. The findings concerning the sharing in urban areas are, in any case, much less clear when put into the context of an appropriate two-step analysis of restrictive effects under Article 101 TFEU. In the first step, one must identify an appropriate counterfactual scenario which should be realistic and also appropriately narrow. In the second step, one must then assess whether the network sharing in urban areas appreciably negatively affects important parameters of competition. Such a finding cannot be drawn merely from the fact that the sharing parties are limited in their independent conduct, such as in the field of infrastructure competition. It is also not given in the first place that there would be any such limitation, and also the other regulators' assumptions on urban areas are not always granted. In light of these considerations, it is not entirely possible to identify any reliable solution of how to determine a geographical scope of network sharing. Considering the approach by the regulators taken so far, such a determination would now, in principle, be reduced to a risk-balancing assessment.

I. Introduction¹

After more than 15 years of 'radio silence' in the field of EU antitrust intervention with regard to mobile network sharing, the European Commission (the 'Commission') has nowadays become increasingly involved in the area. The Commission's interest is particularly projected into the antitrust case on the Czech network sharing.² The Commission has also recently made an (albeit only informal and limited) antitrust appraisal of network sharing arrangements in an Italian merger case.^{3,4}

The public information available on those two cases has so far been only limited. But it is already clear that one of the elements with which the Commission is particularly concerned is the geographical scope

of mobile network sharing. In spite of the latest Commission's steps, however, the metrics by which to assess whether a geographical scope of a particular network sharing is compliant with competition law remain rather unclear. The Commission currently employs a 'rule of thumb' for its concerns with the geographical scope. But rather than erasing some specific competition issues identified by way of a proper Article 101 TFEU analysis, this approach seems to aim at *prima facie* lawfulness.

This article explores the views of the Commission and various regulatory authorities on the competition-law implications of network sharing in various geographic areas. Those views are then put into context of the 'by effect' competition analysis under Article 101 TFEU and an appropriate framework to assess the suspected restrictive effects due to geographical scope of network sharing is suggested. The article then discusses some considerations relevant for finding a geographical benchmark of network sharing which would be able to reap the benefits of sharing in various areas while remaining *ordinarily* compliant with competition law (rather than aiming at *prima facie* compliance).

II. Regulatory Perception of Network Sharing in Rural and Urban Areas

The discussion on network sharing in various geographic areas is linked especially with the so-called active sharing, including the Radio Access Network ('RAN') sharing or other forms of active sharing. There is generally no particular competition concern with passive sharing which also means that this type of sharing is mostly free of competition concerns.⁵ Accordingly, the proposition that the concern with geographical scope is relevant particularly for active sharing (such as RAN sharing) permeates this entire article, even if not stated explicitly.

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1 This article was prepared in the framework of the specific research project titled 'Výhled definice relevantních trhů v technologické a digitální sféře' (in English: Prospects of Relevant Market Definition in Technology and Digital Era), No. MUNI/A/0891/2019, within the Commercial Law Department, Faculty of Law, Masaryk University in Brno.

2 The Commission's ongoing proceedings in Case AT.40305 Network Sharing – Czech Republic. See the case registry available at: https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_40305 [cit. 23 November 2020].

3 The Commission's merger investigation in Case M.9674 Vodafone Italia / TIM / INWIT. See the case registry available at: https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=2_M_9674 [cit. 23 November 2020].

4 For further discussion on some further details on the Czech and Italian cases, see also Geradin, D., Karanikioti, T. *Network Sharing and EU Competition Law in the 5G Era: A Case of Policy Mismatch*. June 2020. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3628250 [cit. 23 November 2020].

5 For the distinction between active and passive sharing and the regulatory views on these types of sharing, see also Mňuk, J. *Sharing Networks, Co-Investing and Co-Operating in Telecommunications: Current and Prospective Competition Scrutiny*. Antitrust: revue soutěžního práva. 3/2019, pp. 79-80.

For simplification and consistency, this article uses the terms 'rural areas' and 'urban areas' to distinguish between the two basic types of areas. The term 'rural areas' refers to areas with a low rate of inhabitancy and 'urban areas' generally to the opposite, i.e. areas such as big cities, agglomerations etc.⁶ As explained further below, competition concerns are identified particularly with network sharing in urban areas while (even active) sharing in rural areas is generally deemed unproblematic.

II.1 Commission's Recent Cases

As already indicated, the Commission referred to competition concerns with network sharing in urban areas in two recent cases. Those cases, however, do not provide much guidance at the moment and the main sources of information are the Commission's press releases.

In the Czech antitrust case, it is mentioned that the Czech network sharing between T-Mobile and CETIN spans across approx. 85% of the Czech population and excludes Prague and Brno as the top two Czech cities.⁷ The press release then contains a quote from Commissioner Vestager that the Commission has 'concerns that the network sharing agreement between the two major operators in Czechia reduces competition in the more densely populated areas of the country'.

In the Italian merger case, the Commission was slightly more elaborate in the press release. It noted that Telecom Italia and Vodafone excluded from their network sharing 'the most densely and highly populated cities and centres of economic importance' which corresponded to over 30% of the Italian population and more than 33% of data traffic. The Commission then explained that it 'welcomes this development, which increases the areas (and the percentage of Italian population) in which Telecom Italia and Vodafone will continue to compete on network quality while retaining the benefits of network sharing in other cities and towns as well as rural areas'.⁸ The Commission concluded that the respective adjustment to the geographical scope of network sharing (emphasis added) 'seems *prima facie* appropriate to alleviate possible concerns stemming from the network sharing agreements between Telecom Italia and Vodafone in Italy'.

In both cases, the Commission also mentioned the market structure in the respective national markets as a factor relevant for the assessment. The Commission's findings on the respective market characteristics are, however, not free of controversy, as discussed below.⁹

II.2 Guidelines on Network Sharing by BEREC and National Regulators

Compared to the Commission's two cases, the competition concern with sharing in urban areas is discussed more elaborately in several guidelines on network sharing. These were issued by the Body of European Regulators of Electronic Communications ('BEREC')¹⁰ and by some regulatory authorities of EU Member States, namely the French

competition authority (*Autorité de la Concurrence*; the 'French NCA'),¹¹ the French telecommunications authority (*Autorité de Régulation des Communications Électroniques et des Postes*; the 'French NRA'),¹² the Austrian telecommunications authority (*Telekom-Control-Kommission*; the 'Austrian NRA'),¹³ and the Romanian competition authority (*Consiliul Concurenței*; the 'Romanian NCA').¹⁴ Guidelines on network sharing were also issued by other EU authorities. But those either do not discuss the geographic competition concern, or even contradict that concern.

II.2.A Context of the Guidelines

First of all, it is important to bear in mind the context of the respective guidelines. Most of the guidelines expressing the concern with network sharing in urban areas were issued in the context of telecommunications regulation.¹⁵ For instance, BEREC admits that it discusses 'some elements and considerations from competition law' but that 'the remit of this common position is limited to NRAs acting under the electronic communications legislation'.¹⁶ Similar remarks are made by French ARCEP or Austrian TTK in their guidelines.¹⁷ This especially means that the guidelines are not meant to present a comprehensive competition-law analysis, but that they rather outline some competition considerations relevant for telecommunications regulation (which may relate to, among others, the imposition of some duties and limitations in relation to spectrum allocation).

Also, the concern with sharing in urban areas has been referenced by the authorities in quite a similar manner for quite some time already (since at least 2011 until the present). However, the telecommunications industry has undergone radical developments within the past 10 years (incl. the deployment of several technology generations, transition to widespread mobile coverage etc.). For these reasons, the guidelines should be read with caution.¹⁸

II.2.B Competition Concerns Expressed in the Guidelines

The difference in perception of sharing in urban and rural areas stems from several factors. One of the primary ones seems to be the concept of infrastructure competition (i.e. competition between operators

6 This is without prejudice to the fact that (i) each of these two categories may be further sub-divided, (ii) there may also be some categories of areas which are somewhere in between the two categories, and (iii) the terms 'urban areas' and 'rural areas' may not always be the precise title for some particular areas.

7 See the Commission's press release of 7 August 2019, IP/19/5110, titled 'Antitrust: Commission sends Statement of Objections to O2 CZ, CETIN and T-Mobile CZ for their network sharing agreement'. Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5110 [cit. 15 November 2020].

8 See the Commission's press release of 6 March 2020, IP/20/414, titled 'Mergers: Commission clears acquisition of joint control over INWIT by Telecom Italia and Vodafone, subject to conditions. Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_20_414 [cit. 15 November 2020].

9 See part III.3 below.

10 BEREC Common Position on Infrastructure Sharing. BoR (19) 110. 13 June 2020 (the 'BEREC 2019 Common Position').

11 French NCA Opinion No. 13-A-08 of 11 March 2013 (*Autorité de la Concurrence. Avis 13-A-08 du 11 mars 2013 relatif aux conditions de mutualisation et d'itinérance sur les réseaux mobiles; the 'French NCA 2013 Opinion'*).

12 French NRA Guidelines of May 2016, ISSN 2258-3106 (*Autorité de Régulation des Communications Électroniques et des Postes. Lignes Directrices. Partage de réseaux mobiles. Mai 2016; the 'French NRA 2016 Guidelines'*).

13 The Austrian NRA issued two guidelines on network sharing: (i) Telekom-Control-Kommission. Position Paper on Infrastructure Sharing in Mobile Networks. Vienna. 4 April 2011 (the 'Austrian NRA 2011 Position Paper') and (ii) Telekom-Control-Kommission. Position Paper on Infrastructure Sharing in Mobile Networks. Vienna. 28 May 2018. (the 'Austrian NRA 2018 Position Paper').

14 Romanian NCA Guidelines of 11 June 2014 (*Consiliul Concurenței. Orientări privind interpretarea și aplicarea art.5 alin.(2) din Legea concurenței nr.21/1996 republicată, cu modificările și completările ulterioare, asupra acordurilor de co-investiție, respectiv de utilizare partajată a rețelelor de comunicații electronice mobile; the 'Romanian NCA 2014 Guidelines'*).

15 Only two of the respective guidelines discussed in this article were issued by competition authorities (the French NRA 2013 Opinion, supra note 11, and Romanian NCA 2014 Guidelines, supra note 14).

16 BEREC 2019 Common Position, supra note 10, p. 8.

17 See the Austrian NRA 2011 Position Paper, supra note 13, p. 3, or the Austrian NRA 2018 Position Paper, supra note 13, p. 4-5. The French NRA 2016 Guidelines were issued based on specific statutory powers granted to the French NRA; those powers were also related to the use of radio frequencies (see the French NRA 2016 Guidelines, supra note 12, p. 3).

18 See part III.2.B below.

in the field of mobile infrastructure deployment). It is argued that infrastructure deployment in rural areas is more demanding (esp. from a commercial and profitability perspective) than in urban areas. This is because there are, by definition, fewer customers in rural areas who use the mobile infrastructure and, hence, also the incentives by operators to deploy the infrastructure are lower. Network sharing can help ensuring that mobile infrastructure (and, hence, also service quality) is present in rural areas in a sufficient extent. By contrast, the above propositions are alleged not to be relevant for urban areas where each operator has a sufficient business case to deploy mobile infrastructure independently and where network sharing serves to reduce the costs of infrastructure deployment and operation only to a lower extent.

Accordingly, limitation of infrastructure competition has been the primary consideration put forward by BEREC in respect of geographical aspects of network sharing. In line with the context in which the BEREC 2019 Common Position was issued, BEREC explains that it focuses on infrastructure competition because *'the European Electronic Communications Code explicitly mentions efficient infrastructure-based competition as an objective which competent authorities should pursue'*.¹⁹ According to BEREC, active sharing can substantially reduce infrastructure competition and incentives to invest and innovate.²⁰ BEREC argues that infrastructure competition encourages investments and innovations to the benefit of consumers. Since infrastructure competition is reasonably feasible in urban areas, BEREC is of the view that standalone deployments should be preferred over (active) network sharing in those areas.²¹ Similar arguments are put forward by other regulators.²²

The regulators also suggest that there are only limited benefits (esp. cost savings) of network sharing in urban areas compared to those in rural areas.²³ This seems to be an extension of the assumption that the profitability of mobile infrastructure is lower in rural areas (where there are fewer customers) compared to urban areas (where the customer base is more extensive). However, no reference is made in the guidelines to any underlying economic or other analysis of cost savings or other benefits of sharing in urban or rural areas.

It is then also proposed that network sharing in urban areas requires extensive information exchange. The French NCA suggests that network sharing in urban areas requires the exchange on information on, for instance, the forecasted traffic (voice, SMS, data) in order to adequately maintain and operate the network in urban areas. According to the French NCA, the information exchanged in urban areas is individualized, geographically precise, relatively recent or prospective, and the exchange takes place frequently. Given that, such information sharing would allow the sharing operators to learn about the commercial policies of the other party.²⁴

The concerns in the guidelines generally overlap and (as indicated above) have not evolved radically over approx. the past 10 years.²⁵ It is, however, not entirely possible to tell whether the guidelines are inspired by one another,²⁶ or whether there are some other reasons for the geographic concern being raised in a similar way over the years and regardless of the technological and other developments.

II.2.C Outcome of the Guidelines' Analyses

The guidelines offer differing approaches towards sharing in urban areas, especially in terms of strictness. Some regulators, such as the Romanian NCA or the French NRA, only indicate that the sharing in urban areas should be viewed with increased caution.²⁷ Other authorities, including BEREC or the French NCA, hold much stricter views. BEREC concludes its analysis by stating that in urban areas, *'infrastructure-based competition is very more likely to be more beneficial than active sharing'*.²⁸ And the French NCA then proposes that in urban areas, where the economies related to sharing are the weakest, the restrictive effects of RAN sharing appear *a priori* too great compared to the possible efficiency gains.²⁹

The Austrian NRA then concluded that network sharing should not take place in the three largest Austrian cities – Vienna, Graz and Linz. Again, in line with the predominantly telecommunications regulation context of its position, the Austrian NRA's conclusion was not necessarily related strictly to pure competition-law considerations but rather to spectrum-allocation and utilization. The Austrian NRA explained that it is *'considering allowing the provision of services in Vienna, Graz and Linz in the ancillary provisions of frequency allocation notices only in the form of an access network without active sharing for the outdoor coverage (including the coverage of buildings from outside locations) in order to ensure a minimum level of infrastructure competition'*.³⁰

II.3 Spill-Over Effects and Opposing Views

Given its topicality (esp. in light of the Commission's cases), the concern with sharing in urban areas may now play a role when operators make commercial decisions on future network sharing deals, or in cases when new investigations are launched across the EU. The latter has already happened in a case in Belgium. In an investigation conducted at the turn of 2019-2020, the Belgian competition authority (the *'Belgian NCA'*) assessed a contemplated network sharing deal between Proximus and Orange, expected to cover all technology generations (2G to 5G) and the entire Belgian territory. In its complaint, Telenet opposed also the wide geographical scope of the cooperation and, in support of its claim, pointed at the Commission's Czech case and the analysis in the BEREC 2019 Common Position.³¹ The Belgian NCA issued interim measures and suspended the implementation of the deal for approx. 2 months while, however, remaining rather reserved with respect to any strong judgements on the geographic scope.³² The implementation of the deal has been resumed after the expiry of the interim measures.³³

In any case, the voice that network sharing in urban areas raised competition issues and should be regulated is not unanimous. The Belgian telecommunications regulator (Institute for Postal Services and Telecommunications; the *'Belgian NRA'*) issued its first guidelines on network sharing in 2012. In those guidelines, the Belgian NRA concluded in relation to the geographical scope of network sharing the following:

27 Romanian NCA 2014 Guidelines, supra note 14, pp. 10-11, French NRA 2016 Guidelines, supra note 13, part. 3.1.1.

28 BEREC 2019 Common Position, supra note 10, p. 19.

29 French NCA 2013 Opinion, supra note 11, para. 129. The general yet categoric nature of this proposition is rather surprising, particularly because the French NCA is a competition authority and a competition analysis should be always made on a case-by-case basis.

30 Austrian NRA 2018 Position Paper, supra note 13, p. 11.

31 The Italian case was not yet out at the time of filing the application.

32 Decision of the Belgian Competition authority of 8 January 2020, BMA-2020-V/M-03, Case No. MEDE – V/M – 19/0036, paras. 68-70, 76-77 and 86.

33 See the press release of 18 March 2020 titled 'Proximus and Orange Belgium will keep on developing the mobile access network of the future, as interim measures come to an end'. Available at: <https://www.proximus.com/news/20200318-Proximus-and-Orange-Belgium-will-keep-on-developing-the-mobile-access-network-of-the-future.html> [cit. 23 November 2020].

19 BEREC 2019 Common Position, supra note 10, p. 14.

20 BEREC 2019 Common Position, supra note 10, p. 10.

21 Ibid., pp. 16-17.

22 See, for instance, the Romanian NCA 2014 Guidelines, supra note 14, pp. 8-9, French NRA 2016 Opinion, supra note 12, p. 24,

23 Austrian NRA 2018 Position Paper, supra note 13, p. 5, Romanian NCA 2014 Guidelines, supra note 14, p. 10.

24 French NCA 2013 Opinion, supra note 11, paras. 98-101.

25 For instance, the nature of the discussion in the BEREC 2019 Common Position is in principle the same as in the Austrian NRA 2011 Position Paper or the French NCA 2013 Opinion.

26 The guidelines mostly do not contain any explanatory cross-references to the potential preceding sources.

As long as BIPT's main objectives and operators' independence are ensured, BIPT is not in favour of imposing geographical limitations for RAN sharing. First, BIPT sees no concrete rationale to prevent sharing in some specific geographical parts of Belgium (if operators' independence is ensured and therefore level of competition not impacted by such sharing). Second, defining criteria below which RAN sharing would be prevented (and above which RAN sharing would be allowed) appears extremely difficult and debatable. BIPT would rather leave it to the market and to market players to decide if and where it is economically justified for them to share networks.³⁴

This statement by the Belgian NRA remains one of the clearest regulator's declarations contradicting the respective concern with urban areas.

There was also opposition against the findings in the BEREC 2019 Common Position. Various stakeholders (incl. operators and industry associations) argued that the findings by BEREC on the geographical scope are too excessive and potentially could have far-reaching negative consequences. According to some stakeholders, the geographic concern was not warranted because infrastructure competition is compatible with network sharing in urban areas or that defining the relevant areas could be difficult in practice. BEREC responded to those comments by stating that the geographical aspect of network sharing constitutes only one of the many factors which come into play in the analytical framework which BEREC identified. BEREC also noted that the analysis should be case-specific. However, BEREC did not clearly respond to (let alone rebut) any of the stakeholders' objections which denoted the concern as irrelevant, outdated or incorrect.³⁵

II.4 Prospective 5G-Related Outlook

Neither the Commission nor the EU regulators in their guidelines³⁶ indicated expressly whether there would be any material differences in the competition concern with urban areas depending on whether the network sharing would concern older and current 2G, 3G, 4G technologies or the upcoming 5G technology. It is, however, worth noting that the Italian case concerned also 5G and the Commission raised the respective concern anyway.

In any case, there are some considerations on 5G which may suggest that the sharing in urban areas could pose a smaller concern under 5G than under the previous technology generations. For instance, 5G environment is expected to be characteristic for a much-increased demand of capacity which would require network densification.

34 Belgian NRA Communication of 17 January 2012 containing guidelines for infrastructure sharing (the 'Belgian NRA 2012 Guidelines').

35 BEREC. Report on the outcome of the public consultation on the draft BEREC Common Position on Mobile Infrastructure Sharing. BoR (19) 109. 13 June 2019, pp. 13-15.

36 It is especially worth noting that BEREC did not include any particular discussion on 5G in the BEREC 2019 Common Position. This is something for which BEREC was criticized already during the public consultation on the common position, to which BEREC reacted by saying that 'it is too early for BEREC to prescribe what the impact of sharing on 5G may be' (see the BEREC Report on the outcome of the public consultation of 13 June 2019, supra note 35, p. 10). BEREC held a virtual workshop with the stakeholders on 16 November 2020 with the aim of 'understanding the reasons, if any, as to why, how, where, and when BEREC might wish to update its views on the issue of mobile infrastructure sharing as a result of 5G' (see the press release of 15 October 2020 titled 'BEREC invites stakeholders to express interest in presenting their views at the virtual workshop on mobile infrastructure sharing', available at: https://berec.europa.eu/eng/news_and_publications/whats_new/7671-berec-invites-stakeholders-to-express-interest-in-presenting-their-views-at-the-virtual-workshop-on-mobile-infrastructure-sharing [cit. 22 November 2020]). One may, however, wonder whether these steps should have been made earlier since the process of 5G deployment is already advanced in the EU.

Standalone network deployments could even be unfeasible to achieve the requisite network density. All of that is expected to be particularly relevant in urban areas. This might result in the competition concern with urban areas being lower or even disappearing completely.³⁷ However, this remains to be seen.

III. Two-step Analysis of Restrictive Effects under Article 101 TFEU

One should ask the relevant questions in order to get the appropriate answers. For assessing the impact of network sharing in various geographical areas on competition, the relevant questions currently seem to be blurred by the myriad of general hypotheses and assumptions which are summarized in the preceding part. The following part outlines the requisite cornerstones of competition analysis.

Network sharing agreements are deemed to pursue legitimate and pro-competitive aims and their various benefits are (at least in theory) generally recognized. The industry now even calls for an explicit recognition by the Commission of network sharing's benefits either in the Horizontal Guidelines or even in a specific Block Exemption Regulation.³⁸ Hence, it goes without saying that network sharing agreements are horizontal cooperation agreements which should be appraised in the 'by effect' analysis under Article 101 TFEU (and not as 'by object' restrictions).

The requisite stages of the restrictive effects' analysis under Article 101(1) TFEU are laid down in the Commission's soft-law.³⁹ The analysis comprises of two steps. The first step is to identify a realistic counterfactual scenario, i.e. the scenario in the absence of the restriction.⁴⁰ The second step is then to assess the impact of the network sharing on the important parameters of competition against the identified counterfactual.⁴¹

In principle, the two steps cannot be made in abstract and in isolation from one another. The identification of a counterfactual (step 1) should already take into account the respective theory of harm pursued (for instance, restrictive effects with regard to a certain parameter of competition due to network sharing in some urban areas). In this sense, the counterfactual analysis is interrelated with the assessment of important parameters of competition (step 2). The underlying thinking and analytical process with regard to the two steps shall be pretty much inseparable, even if the final discussion (such as in a final decision or a statement of objections) can be very well structured into the two steps.

37 See Mňuk (2019), supra note 5, p. 86.

38 This position has been proposed, for instance, in the course of the recent public consultation on Horizontal Block Exemption Regulations and the accompanying Horizontal Cooperation Guidelines that took place between 6 November 2019 and 12 February 2020. The set of comments provided by various stakeholders is available at: https://ec.europa.eu/competition/consultations/2019_hbers/index_en.html [cit. 22 November 2020]. GSMA explained that network sharing agreements 'should be considered in principle pro-competitive and should be both covered by a [Block Exemption Regulation] and addressed specifically in the [Horizontal Cooperation Guidelines]' (GSMA questionnaire, question 4.45 and also question 4.6). ETNO stated that 'network sharing agreements are probably the most important form of cooperation that should be covered in the [Horizontal Cooperation Guidelines] or under the new proposed Block Exemption Regulation. Network sharing agreements have become widespread in Europe' (see ETNO questionnaire, question 4.45 and also question 4.2).

39 The Commission Guidelines on the application of Article 81(3) of the Treaty [Article 101(3) TFEU], OJ C 101, 27.4.2004, p. 97-118 (the 'Article 101(3) TFEU Guidelines') and the Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, OJ C 11, 14.1.2011, p. 1-72 (the 'Horizontal Cooperation Guidelines').

40 Horizontal Cooperation Guidelines, supra note 39, para. 29, and Article 101(3) TFEU Guidelines, supra note 39, para. 17.

41 Horizontal Cooperation Guidelines, supra note 39, para. 27, and Article 101(3) TFEU Guidelines, supra note 39, para. 16.

III.1 Step 1: Counterfactual Analysis of Geographical Scope

As the Court of Justice held in *Mastercard*, a counterfactual scenario should be ‘appropriate to the issue it is supposed to clarify’.⁴² Accordingly, in case of suspected restrictive effects due to sharing in some geographical areas, the counterfactual analysis needs to focus on the geographical aspects of the network sharing which supposedly restrict competition.

Along the same veins, the process of identifying a counterfactual can significantly help answering the question whether there may be a competition law infringement in the first place. For instance, if an analysis shows that the status-quo is the only way and that other alternative scenarios would either be unrealistic (see also below) or even detrimental to competition, there shall not be any restrictive effects.⁴³ And conversely, an appropriately identified counterfactual may significantly simplify the finding that a restriction of competition is in place in a particular case.

Identifying an appropriate geographical counterfactual scenario is a delicate and demanding exercise which should not be underestimated. A possible complexity of identifying a counterfactual does not lower the requirements for competition authorities. Rather the other way around, competition authorities are required to produce even stronger evidence and facts in complex cases.⁴⁴

The following discussion focuses on two important aspects of a counterfactual analysis in cases when there is a concern with geographical scope of mobile network sharing, namely a counterfactual’s realistic nature and an appropriately narrow scope.

III.1.A Realistic Geographical Counterfactual

The Court ruled that the counterfactual scenario must be realistic.⁴⁵ A situation which proves to be unrealistic cannot be an appropriate counterfactual in competition analysis. For geographical scope of mobile network sharing, the crucial question is whether the sharing could realistically be implemented without also extending to the areas which are supposed to pose the restriction (produce the restrictive effects).

It may prove to be the case that a limited geographical scope would not be realistic. This may be, for instance, due to the fact that excluding some areas from the sharing could result in technical difficulties, such as the creation of a ‘swiss-cheese’ situation across the country’s area which would be very problematic to maintain and operate or regarding the related handover (or handoff)⁴⁶ issues occurring between the shared and non-shared network when a customer is on the move. Other issues may then include, for example, the impossibility to exclude sharing in some areas only for one technology (e.g. 4G or 5G) and preserve the sharing for other technologies (e.g. 2G and 3G). It may also be unrealistic to exclude from the sharing some areas where there is only a small number of sites, even if those areas are relatively more ‘urban’ compared to the areas surrounding them. The operational difficulties stemming from the non-implementation of sharing in some areas could be so great that a sharing deal would simply not be implemented at all in the first place, i.e. that there would either be a ‘complete package’ deal with active sharing also in some urban areas, or no sharing at all.

The sharing in some particular areas may also prove to be ‘objectively

necessary’ or ‘ancillary’ to the overall sharing deal, that is to say ‘directly related and necessary for the implementation’ of the network sharing agreement in question.⁴⁷ This conclusion may be a result of an analysis of whether the sharing would be realistic or not, and the analysis of realistic nature and ancillarity often goes hand in hand. Network sharing in some particular areas would not be restrictive of competition on its own, provided that the sharing would not be realistic without those areas or if the sharing in those areas is ancillary to the overall deal (see also below).

The analysis of whether a geographically reduced network sharing would be an appropriate counterfactual should be made in the light of the specifics of each national market and individual case. What may prove to be realistic in one case or in one country may not be realistic in another country due to, for instance, the country’s topology, the distribution of population across the country (e.g. many smaller cities whether the exclusion of sharing would pose objective difficulties) and so on. Given that, the transferability of a geographical scope of network sharing from one country to another is only limited and so is the precedential value of cases concerning the geographical scope.⁴⁸

III.1.B Appropriately Narrow Geographical Counterfactual

Counterfactual analysis is essentially a comparison exercise⁴⁹ in which the counterfactual scenario serves as a benchmark against which one defines the scope of a restriction. The eventual purpose of the counterfactual analysis is to single out the suspected restriction of competition and, if possible, set the focus of the competition law analysis only on the restrictive aspects of an agreement rather than also on the parts of an agreement which do not pose any restriction.⁵⁰

Accordingly, when there is a concern with network sharing in some particular areas, this means that one should first explore whether the suspected restriction would be remedied if some particular contractual clauses were erased or adjusted (such as clauses on information exchange, the process of independent infrastructure deployment by each party etc.). The counterfactual analysis may consider the complete exclusion of some areas from the sharing (which is arguably a more radical step than contractual adjustments) only if contractual adjustments prove to be insufficient to drive the restriction away. In other words, the exclusion of some particular areas in a counterfactual should be a measure of last resort, rather than the starting point of the counterfactual analysis.

Anyway, assuming that contractual adjustments would be insufficient and it would be inevitable to consider the exclusion of some areas altogether, it follows that a geographically limited counterfactual cannot be too broad and cannot also cover the areas which do not cause the suspected

47 Judgement of the Court of First Instance of 18 September 2001, *Métropole Télévision*, T-112/99, EU:T:2001:215, para. 104, and judgement of the General Court of 24 May 2012, *MasterCard*, T-111/08, EU:T:2012:260, para. 77.

48 See also the proposition made by BEREC that the analysis of geographical aspects should be context-specific (supra note 35).

49 Lianos, I., Korah, V., Siciliani, P. *Competition Law. Analysis, Cases & Materials*. Oxford University Press. 2019, p. 566.

50 See also Faull & Nikpay (2013), supra note 43, p. 287, para. 3.369: ‘(...) where the alleged restriction is not an ancillary restraint, that is to say where it is not directly related to and necessary to the implementation of a main operation, the Commission can assess the effects on competition of individual clauses independently of the potential effects of the entire agreements of which they form part. Where an alleged restriction is an ancillary restraint, the effects of the alleged restriction have to be analysed in conjunction with the main agreement.’ See also the General Court’s ruling in the *Mastercard* judgement that, in case a certain clause is ancillary to the main agreement, one cannot analyse the effects of that clause on competition independently but only in conjunction with the entire agreement (see judgement of the General Court of 24 May 2012, *MasterCard*, T-111/08, EU:T:2012:260, para. 75). The same conclusion goes for a situation when it would not be realistic to separate a certain clause from the rest of the agreement.

42 Judgement of the Court of 11 September 2014, *MasterCard*, C-382/12 P, EU:C:2014:2201, para. 108.

43 Faull, J., Nikpay, A. (eds). *The EU Law of Competition. Third Edition*. Oxford University Press. 2013, p. 284, para. 3.360.

44 The General Court ruled in the judgement of 28 May 2020, *CK Telecoms*, T-399/16, EU:T:2020:217, that ‘(...) the more prospective the analysis is and the chains of cause and effect dimly discernible, uncertain and difficult to establish, the more the quality of the evidence produced (...)’.

45 Judgement of the Court in *MasterCard* (C-382/12 P), supra note 42, para. 108 and 111.

46 See, for instance, Coll, E. *Telecom 101: Fifth Edition: 2020. High-Quality Reference Book Covering All Major Telecommunications Topics... in Plain English*. Teracom Training Institute. 2020, p. 176.

restriction. How to find such an appropriately narrow geographical counterfactual? Arguably by way of a detailed step-by-step analysis focusing on the implications of excluding a certain area from the sharing. This means that a competition authority, having the respective theory of harm in mind, should at the beginning determine the implications of excluding a relatively small area (say, the biggest city included in the sharing) and assess whether this exclusion is sufficient to erase the restriction. If not, another step would be to assess the effects of excluding one more area where the parties share networks. And so on. The appropriate geographical counterfactual would then be the one which excludes just the right (and realistic) amount of areas to remove the restriction but which leaves the lawful sharing in the remaining areas untouched.

The type of analysis discussed above has so far not been presented in any publicly known materials or cases where geographical scope of network sharing was a concern. For instance, there is no public information whether this has been the case in the Commission's two cases. In the Commission's Italian case, further details on the Commission's competition appraisal will likely remain undisclosed. The Commission commented on the geographical scope of network sharing only as a sort of side-analysis on top of the actual merger investigation.⁵¹ It is admitted that the geographical scope of active sharing in Italy (30% of population and 33% of traffic non-shared) has been set based on the operators' commercial decision.⁵² Therefore, even though the Commission said that it was happy with this geographical setting, this does not tell much as to whether there would be a restriction of competition if the operators had decided to have a more extensive sharing (or whether some contractual adjustments of their sharing would have been sufficient). In other words, the Italian case only shows that the particular geographical scope was *prima facie* lawful for the Commission,⁵³ but does not tell us why this is the case or what would be the effects under Article 101 if the sharing was geographically more extensive.⁵⁴ And in the Czech case, the Commission only publicly stated that it had concerns with approx. 85% of the Czech population covered by active sharing.

It follows that when a detailed counterfactual analysis is not performed and competition authorities rely merely on a 'rule of thumb', there remains a significant threat that the counterfactual would not appropriately identify the area-specific restriction. As explained above, it is not warranted in the first place that any areas would need to be excluded from the sharing because, depending on each case, it might be sufficient merely to put in place various contractual safeguards. An inappropriate counterfactual which would take a shortcut and automatically require an extensive exclusion of some areas from the sharing could easily also affect the areas which are not problematic competition-wise (i.e. where the sharing is lawful). This type of analysis would eventually overstate the actual scope of the restriction and could, hence, lead to an improper overregulation.

51 As explained in the press release IP/20/414, supra note 8 (emphasis added): '*The creation of the joint venture is part of a broader set of cooperation agreements with which Telecom Italia and Vodafone aim at a fast roll-out of 5G in Italy. Telecom Italia and Vodafone intend to extend their existing agreement to share (...). These cooperation agreements have not been subject to review in the merger investigation.*'

52 Ibid. (emphasis added): '*In the framework of the Commission's preliminary investigation into the network sharing Telecom Italia and Vodafone have decided to scale down their active sharing (...).*'

53 Ibid. (emphasis added): '*(...) those adjustments seem prima facie appropriate to alleviate possible concerns stemming from the network sharing agreements between Telecom Italia and Vodafone in Italy.*'

54 Similar comments can be made with respect to some other network sharing deals in Europe which have a relatively more geographically limited scope, including e.g. the sharing between Bouygues Telecom and SFR in France. In this case, the parties excluded from the network sharing 32 largest urban areas with the population of above 200,000 inhabitants. The French regulators (or the Commission) did not raise concerns. But this does not prejudice whether a more extensive cooperation would have eventually posed a restriction under Article 101 TFEU.

III.2. Step 2: Impact of Sharing in Urban Areas on Important Parameters of Competition

The identification of an appropriate counterfactual, regardless of how complex or demanding, is not the end of the story. The second step is even more important. This step assesses the impact on the important parameters of competition against the counterfactual. In order to find restrictive effects under Article 101(1) TFEU, this impact should be appreciably (i.e. significantly) negative compared to a counterfactual scenario.⁵⁵ In other words, the analysis needs to show that the situation would be appreciably better in a counterfactual than in the status-quo.

The essential exercise in this step is to identify the respective important parameters of competition. In the Horizontal Guidelines, the list of important parameters of competition is non-exhaustive and includes '*price, output, product quality, product variety and innovation.*' In network sharing cases, the important parameters of competition would need to be identified on a case-by-case basis and with regard to the characteristics of each country.

III.2.A No Negative Impact on Parameters Merely Due to Limited Freedom of Action

First of all, the general competition concerns with the sharing in urban areas⁵⁶ do not prejudice on their own the impact on any parameters of competition. The Court of First Instance held in *Métropole Télévision* that Article 101(1) TFEU should not serve to '*extending wholly abstractly and without distinction to all agreements whose effect is to restrict the freedom of action of one or more of the parties.*'⁵⁷ As explained above, one of the respective underlying concerns is that the sharing parties lose, to some extent, their ability to engage in infrastructure competition in urban areas where this competition would otherwise be feasible.

However, this would need to result in a negative impact on some parameters of competition in order for restrictive effects to arise. For instance, infrastructure competition, even if restricted to some extent, it would no longer be so relevant if the network sharing ensures in a much higher overall robustness and extent of the shared network compared to what would be possible without the sharing.⁵⁸

So when the Commission mentions in the Italian case that the sharing parties '*will continue to compete on network quality while retaining the benefits of network sharing in other cities and towns as well as rural areas,*'⁵⁹ it does not say very much as to how the potential limitation of network quality competition might affect some parameters of competition important in Italy (and which ones), let alone translate into some restrictive effects.⁶⁰ It follows that the competition-law discussion cannot stop at a point where one only identifies a potential limitation of freedom of conduct due to sharing in urban areas. It is only a subsequent deeper analysis, including the assessment of the impact of such a limitation on the case-specific important parameters of competition, after which one may find restrictive effects under Article 101(1) TFEU.

III.2.B No Automatic Validity of Assumptions on Urban Areas

Furthermore, it should be borne in mind that the underlying assumptions due to which sharing in urban areas poses a competition concern are highly context- and case-specific. Those assumptions (incl. the presumed limitation of infrastructure competition, expected low cost savings or other benefits, and extensive information exchange

55 Horizontal Cooperation Guidelines, supra note 39, para. 24.

56 See part II. above.

57 Judgement of the Court of First Instance in *Métropole Télévision* (T-112/99), supra note 47, para. 77. See also Colomo, Pablo Ibáñez. *The Shaping of EU Competition Law*. Cambridge University Press. 2018, pp. 93-94 for further references.

58 See also Mňuk (2019), supra note 5, p. 84.

59 See supra note 8.

60 The comments on the Italian case above in part III.1.B can also be extended to this aspect.

in urban areas)⁶¹ are sometimes presented as given and undisputed. However, those assumptions are debatable, to say the least.

First, it is not entirely granted that infrastructure competition (and investments and innovation) would necessarily be appreciably limited due to sharing in urban areas. Whether any such limitation would occur depends on many factors. For instance, the sharing may technologically be limited only to a basic coverage layer and not relate to other (higher) capacity layers, in which case the sharing parties would be free to implement capacity deployments individually. Contractual settings of the cooperation could also ensure the ability of each party to deploy infrastructure individually, such as by putting in place various rules covering the process of deploying individual sites or other infrastructure solutions.

Second, the proposition that cost savings would be low in urban areas has not been backed-up by a reference to any economic or other analysis in the materials presented by the regulators or the Commission. So, the presumption that the cost efficiencies of network sharing in urban areas are low compared to those in rural areas are a mere unverified hypothesis. A competition analysis cannot be confined to such broad and general presumptions.⁶² It may very well be the case that the cost savings in urban areas due to active sharing are significant and possibly even higher than in rural areas. This could be, for instance, due to the fact that the sharing in urban areas would reduce the costs of operating very complex and dense standalone networks, reduce the planning and operational complexity of placing the sites on scarce rooftop locations and so on. Without an empirical analysis in each individual case, the discussion will remain only abstract and cannot lead to any categoric findings.

The discussion on the value of cost savings in urban areas and rural areas has, moreover, become relevant in some subsequent stages of a competition analysis but not at its beginning. This is because cost savings (or other benefits) become important especially once some restrictive effects are identified. The benefits may help tip the scales in favour of a conclusion that the practice should be exempted under Article 101(3) TFEU.⁶³ In the absence of an identified restriction due to urban areas, it would be premature to conclude that network sharing should not take place in those areas because urban area-specific cost savings or other benefits would be low anyway. However, this is what some of the regulatory materials, contrary to a proper course of a competition analysis, seem to suggest.

Third, arguing that information exchange in urban areas will be extensive and will, therefore, automatically pose an issue may also not properly address the point. Information exchange is a rather 'traditional' competition concern arising in many types of horizontal cooperation agreements in various industries. Multiple measures to avoid a problematic and potentially restrictive information exchange are available. In this regard, network sharing in urban areas is no more special than many other commercial activities which require information exchange between competitors. For instance, the information exchange can be confined to strictly limited teams of individuals and limited in scope only to what is strictly necessary for the technical operation of the shared network, and Chinese walls or various other measures can be put in place.⁶⁴ Accordingly, information exchange is an area which should not pose an insurmountable obstacle to network sharing in urban areas.

The categoric nature of the views presented by some regulators

may create a temptation to rely on the assumptions that network sharing in urban areas is restrictive or problematic *by definition*.⁶⁵ However, it follows that a case-specific and context-specific analysis is always required in respect of network sharing in urban areas and one should not fall for those assumptions without a proper verification. For instance, there are already published economic results which show that various parameters of competition have been affected positively by the network sharing in the Czech Republic.⁶⁶ This is even in spite of the fact that the Commission is preliminarily concerned with a relatively wider geographical span of the Czech network sharing.⁶⁷

III.3 Market Structure and Other Additional Factors

There are also other factors which are, on their own and in combination with other factors, potentially relevant for competition law analysis of network sharing. It is noted above that one of those factors is the type of sharing (passive or active).⁶⁸ It is also useful to assess which technology generations are included in the network sharing. Lower competition concerns would usually be identified if the sharing concerned only legacy technologies (such as 2G or 3G) rather than current or new technologies (such as 4G or 5G). For instance, passive (or even active) sharing concerning only 2G and 3G should now raise no competition issues even if implemented on a nationwide basis.

Another factor to consider then relates to the position of the parties involved in the network sharing. BEREC argues that analysis should consider the market shares and competitive forces in the respective market and the number of operators involved in the sharing.⁶⁹ In practice, therefore, the competition analysis should focus on the sharing parties' 'market power', i.e. 'the ability to maintain prices above competitive levels for a significant period of time or to maintain output in terms of product quantities, product quality and variety or innovation below competitive levels for a significant period of time.'⁷⁰ In essence, the notion of market power serves as a proxy to estimate whether the effects of a cooperation would be appreciable.⁷¹ The analysis of market power should take into account the market in its complexity and should look beyond the parties' market shares or the number of operators on the market and their ranking *vis-a-vis* each other (for example, whether an operator ranks first or last in terms of its market share).⁷²

Market structure as a factor relevant for the overall assessment has been pointed out by the Commission in the Czech and Italian cases. The Commission noted that the Czech Republic is a three-operator market, with the network sharing taking place between the two largest operators accounting for approx. 75% of subscribers. Italy was then appraised by the Commission as a five-operator market which is 'less concentrated than in other Member States'. However, the differences between the Czech and Italian market are smaller than what may follow from the Commission's remarks.

As for the Czech Republic, the Commission did not take into

61 See esp. part II.2.B above.

62 See the judgement of the Court of First Instance of 2 May 2006, *O2 Germany*, T-328/03, EU:T:2006:116, para. 116, where the court criticised the Commission for confining the analysis 'to a *petitio principii* and to broad and general statements'.

63 See also the Opinion of Advocate General Bobek of 5 September 2019, *Budapest Bank*, C-228/18, discussing the 'net effects' approach under which some benefits are to be considered already in the Article 101(1) TFEU analysis, i.e. when assessing the existence of a restriction of competition.

64 See also Mňuk (2019), supra note 5, p. 83.

65 A case-by-case approach is supported in the BEREC 2019 Common Position, supra note 10, p. 2: 'In all instances, therefore, assessing infrastructure sharing agreements will require evidence-based analysis on a case-by-case basis.'

66 Maier-Rigaud, F. P., Ivaldi, M., Heller, C.-P. *Cooperation among Competitors. Network sharing can increase Consumer Welfare*. March 2020. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3571354 [cit. 22 November 2020].

67 For the Commission's concerns, see supra note 7.

68 See the discussion at the beginning of part II. above.

69 BEREC 2019 Common Position, supra note 10, p. 16.

70 Horizontal Cooperation Guidelines, supra note 39, para. 25.

71 See Faull & Nikpay (2013), supra note 43, p. 285, paras. 3.364-3.365, explaining that the notions of appreciability and market power serve the same purpose.

72 Pápai, Z., Csorba, G., Nagy, P., McLean, A. *Competition policy issues in mobile network sharing: a European perspective*. Journal of European Competition Law & Practice. Volume 11, Issue 7. Oxford University Press. September 2020, p. 352.

account in the Czech case the fourth smaller operator. The Commission also did not account for the converged market strength of the third Czech operator due to its presence in the fixed segment.⁷³ As for Italy, the Commission then did not mention that the market is dominated by three largest operators and the sharing under the Commission's scrutiny takes place between the two largest of them who account for approx. 60% of subscribers. And as regards the number of operators, unlike in the Czech case, the Commission took into account not only the smaller fourth Italian operator, but also the fifth emerging operator which started its operations only as late as in February 2020.

It follows that while market structure is a relevant factor for the assessment of network sharing (as for any other horizontal cooperation agreements), the analysis must focus on determining whether the sharing parties have *market power* within the corresponding meaning in competition law terms (as explained above). The analysis cannot be confined to a simple assessment of the number of operators or the arithmetical value of their market shares. The analysis must take into account all the relevant facts which, as shown above, is not always the case.

IV. Determining Geographical Scope of Network Sharing

All of the above boils down to a 'million-dollar question' of how the geographical scope of network sharing should be determined. Especially in case the intention is to reap the benefits of network sharing in as many areas as possible while still remaining compliant with competition law, the response to this question is everything but simple.

The most appropriate (and in fact the only precise) way to find the suitable geographical scope would be to conduct the full-fledged two-step analysis of restrictive effects under Article 101 TFEU described above. This analysis should always be made on a case-by-case basis. Relevant precedents are only very scarce and their value is limited, as explained above. There has not yet been a single antitrust case in which it would be clarified, against the background of an appropriate competition analysis (such as the one described above), what the restrictive effects linked specifically to some particular geographical areas were supposed to be. The two recent Commission's cases are currently not very much help.⁷⁴

Anyway, since the intervention by competition authorities mostly comes only once the sharing deal is put into operation, some degree of self-assessment is usually involved. Since the full-fledged two-step analysis could be too burdensome (or even impossible) to conduct,⁷⁵ an option could be to explore some proxies (such as population density or traffic in various areas⁷⁶) to determine the geographical scope. It must, however, be borne in mind that no such proxies would serve to identify any potential restriction of competition. Relying on such proxies could even result in the opposite, i.e. in the exclusion of some areas where

network sharing could be particularly beneficial for consumers (due to, for instance, significant cost savings or much higher network quality in those areas due to the sharing).

As noted above, the issue with the geographic concern is that it is only very general and built on assumptions which are not always warranted. Under those circumstances, it is even doubtful whether it is justified to require any geographic limitations of network sharing. But in spite of that, the determination of a geographic scope (esp. in the course of self-assessment) would generally boil down to a risk-balancing exercise. On one hand, the more areas are excluded from a cooperation, the more it is likely that the sharing would be deemed *prima facie* compliant with competition law. And on the other hand, it cannot be excluded that a broader geographical span of network sharing could give rise to some competition concerns, even though it is not given that these concerns will result in a finding of a restriction of competition once a proper analysis is conducted.

V. Conclusion

The voice that network sharing in urban areas poses a competition issue and should therefore be limited has been given a central stage especially by the Commission's two recent cases. Nonetheless, this article explains that the respective propositions and assumptions on urban areas are not always entirely warranted and that it is not automatically given that network sharing in urban areas would pose a competition issue in the first place. In that regard, this article suggests an approach which balances the scales in favour of an objective and detailed competition analysis of each respective network sharing deal.

Accordingly, the article discusses a two-step analysis which should be followed in order to find restrictive effects under Article 101(1) TFEU. This two-step analysis is by no means novel but applies to all types of horizontal cooperation agreements under EU competition law. Yet, as some regulators suggest a strict treatment of sharing in urban areas in a way which cannot be easily reconciled with the requisite competition-law analysis, it is useful to recall the cornerstones of analysing restrictive effects in the appropriate context.

The regulatory interventions into the geographical scope of network sharing have so far been only quite limited and, in any case, do not provide much guidance for other cases. It is discussed above that the regulatory intervention, such as in the Commission's Italian merger case, eventually resulted in a geographical setting of the network sharing which was deemed *prima facie* compliant with competition rules. However, the aim of competition law should not be to transform network sharing deals which raise competition concerns into deals which are *prima facie* compliant. Competition intervention should rather aim at erasing restrictive effects in a sensitive and precise manner and otherwise leave the lawful commercial conduct by the relevant stakeholders up to the market forces.

Finding the right balance and ensuring an *ordinary* (rather than *prima facie*) compliance with EU competition law is admittedly a great challenge which, as explained above, is certainly true also for the competition concern with geographical scope of network sharing. This is, however, no reason which would justify that the competition analysis of network sharing in urban areas could be simplified or circumvented. Rather the other way around, such an analysis requires competition authorities to be even more attentive to the facts and the law in order to reach the requisite findings.

73 The Commission stated that the third Czech operator 'has no meaningful presence in the fixed telecoms segment'. This statement in the press release is surprising because it has been the Commission itself who assessed and cleared the acquisition of certain Liberty Global operations (incl. in the Czech Republic) by Vodafone approx. 1 month before issuing the statement of objections in the Czech case. The acquisition concerned an extensive fixed network in several EU Member States, including the Czech Republic (see the Commission's Case M.8864 Vodafone / Certain Liberty Global Assets).

74 See the discussion on the Czech and Italian cases in part III.1.B above.

75 Due to, for instance, unavailability of data, uncertainties as to the eventual practicalities of functioning and operation of the network sharing etc. at the negotiation stage.

76 Traffic seems to be a more relevant proxy than population density because it factors more precisely consumer behaviour and services consumption. But anyway, both population density and traffic are only statistical data which do not say anything in particular about the impact of the sharing in urban areas on competition.

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