
Toward ne(X)t neutrality. A re-thinking of the EU Open Internet Regulation*

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Abstract

This paper focuses on net neutrality regulation, which in the EU is considered and designed as a legislation mainly aimed to protect end-users' interest, within the composite electronic communications' regulatory framework.

For this reason, the current EU Open Internet Regulation has been developed without a sound consideration of its economic impact on markets, in terms of static and dynamic efficiency, which has been identified as one of the main problems regarding the implementation of Net Neutrality rules in Europe, especially in light of new technologies development. This pitfall has been intensified by the significant technological and market changes happened in the last few years within the "extended digital ecosystem" where a much wider set of players interplay. These evolutions transformed market positions of the largest Content and Application Providers (CAPs) both in terms of countervailing power and their ability to influence end-users' internet experience. In this context, the paper advocates for a ne(x)t neutrality approach, embracing a "proportionality" principle as well as having a systemic perspective and thus reframing the existing asymmetric approach vis à vis the different actors in the digital ecosystem.

A first step in this direction would be to update and clarify at the EU level the Open Internet Regulation's provisions, by embracing an interpretation that takes into account technology and market evolution. A second step would be grounded on a more radical rethinking, by allowing more flexibility and freedom for ISPs to implement a quality differentiation, as for premium quality services, as well as for zero-rating offers, both as 'class-based offers' and 'content-specific retail offers', yet only when it is the end-user choosing for such a differentiation. This could be done by introducing an 'application-agnostic anchor product' for IAS with a minimum QoS that all users are enabled to choose. This consumer-empowering approach to net neutrality could strike an effective regulatory balance by guaranteeing a freedom of choice, on one side, yet without over-restricting the economic and commercial freedom of companies, on the other side.

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* L'articolo è stato sottoposto, in conformità al regolamento della Rivista, a referaggio "a doppio cieco".

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Keywords

net neutrality – open internet – competition – digital infrastructures – regulation

1. Introduction: rationale(s) of the net neutrality debate(s)

Telecommunications operators (shortened often here as telcos) traditionally provide services enabling «direct interpersonal and interactive exchange of information via electronic communications networks involving a finite number of persons». This is the current definition of an ‘interpersonal communications service’, under European Electronic Communications Code (EECC).¹ When it comes to the Internet, telcos had and still have a clear role, i.e., to provide connectivity.² Therefore, besides providing ‘interpersonal communication services’, telcos enable the distribution of digital services, contents, and applications to end-users over their (high-speed)³ telecommunications infrastructures by providing end-users with internet access services (IAS):⁴ they therefore work as Internet Service Providers (ISPs). Those contents, information services and applications (also called information society services, ISS⁵) are usually⁶

¹ Art.2 EECC: directive (EU) 2018/1972. Overall, electronic communications services comprise (i) internet access service; (ii) interpersonal communications services (iii) services consisting wholly or mainly in the conveyance of signals.

² Electronic communications services are disciplined by the European Electronic Communications Code (EECC: directive (EU) 2018/1972) and comprise (i) “internet access service”; (ii) interpersonal communications services (iii) services consisting wholly or mainly in the conveyance of signals.

³ Within the 2018 EECC, investment promotion toward very high-capacity networks has become a new independent general objective of the European strategy. Accordingly, National Regulatory Authorities are mandated to «promote connectivity and access to, and take-up of, very high-capacity networks [VHCN], including fixed, mobile and wireless networks, by all citizens and businesses of the Union». See A. Manganelli-A. Nicita, *The Governance of Telecom Markets*, London, 2020.

⁴ An “internet access service” is a service that provides access to the Internet and, thereby, connectivity to virtually all end points of the Internet, irrespective of the network technology and terminal equipment used. Art. 2 EECC.

⁵ An information society service is generally defined as «any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services». Those can be video streaming services, search engines, email services and so on. These have been originally disciplined by the E-Commerce Directive (directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market) as amended by the Digital Service Act (DSA, regulation (EU) 2022/2065 on a Single Market For Digital Services) and recently by the Digital Markets Act (DMA, regulation (EU) 2022/1925 on contestable and fair markets in the digital sector).

⁶ Actually, the digitalisation has implied a process of multimedia convergence (i.e., a range of different

not provided by ISPs and end-users needs to buy them from other players within the internet ecosystem, i.e., from content and applications providers (CAPs). Therefore, IAS and ISS work as complements to satisfy the needs of an internet end-user.

In the internet landscape, there were (and still partially there is) an asymmetry in the complementarity relationship between the providers of those services and that asymmetry was one of both technical and economic nature. Indeed, ISPs have the material and technical capacity to manage content data traffic (i.e., throttling, prioritising or blocking data packages), consequently, affecting the service quality (or even the availability) of content and application for end-users. On the contrary, CAPs didn't play any role in the distribution of their content. Moreover, under an economic perspective, depending on their scale and the competitive environment, ISPs can be bottlenecks for CAPs to reach end-users and, thus, in a situation where CAPs had no countervailing power, ISPs could exert market power vis à vis both end-users and CAPs.

The network neutrality debate originated in this very context, and its core issue was to grant that «all data packets on the Internet should be treated equally»,⁷ therefore framing the internet traffic on an inherent “best-effort” approach. Afterwards, the net neutrality concepts and debates took on many different hues and forms depending on the market and policy context. Anyhow, its consolidated basic definition still mainly concerns the prohibition of traffic prioritisation (“fast lane” versus “dirty roads” or, in other words, “managed services” versus “best effort” ones), with or without compensation for these differentiations.⁸

Indeed, the “best effort” approach was a win-win strategy in a technical environment of non-time-sensitive applications, i.e., simple email exchanges and web browsing, with quite decentralised and symmetric data flows, needing low bandwidth, with very scarce risk of congestion. In that situation, traffic management and prioritisation (if any) would be likely undertaken to obtain some economic advantage rather than to aim at an efficient use of network resources.

Under an economic viewpoint, the underlying theoretical assumption was that, without any net neutrality obligations, ISPs would have set a system of data paid termination, as for voice calls,⁹ and consequently exploit their market power by charging ex-

digital content and services to be transmitted on the same digital network) which has allowed telcos to provide some additional services, i.e., multi-play offers, for example Audiovisual content. Those offers including both fixed broadband and IPTV, currently represent a significant portion of total broadband subscriptions in Europe. See A. Manganelli-A. Nicita, *The governance of Telecoms markets*, cit.

⁷ T. Wu, *Network Neutrality, Broadband Discrimination*, in *J. on Telecomm. & High Tech*, 2, 2003, L. 141.

⁸ S. Greenstein-M. Peitz-T. Valletti, *Net Neutrality: A Fast Lane to Understanding the Trade-Offs*, in *Journal of Economic Perspectives*, 30(2), 2017, 127 ss.

⁹ Telecommunication sector has been designed by regulation, *ab origine*, as an interconnected networked system, where each user can communicate with any other user, even if they subscribed to different retail (fix or mobile) service providers. This interconnected networked system, and its related services are divided into: (i) call origination and collection, (ii) call transit and (iii) call termination. If the calling party and receiving party belong to different network (off-net call), the calling user's network operator must route the signal (or data) through the called party's network operator, to 'terminate' the call. In this way, calling user's network operator interconnects with the receiving party's network, 'using' a segment of its network, the termination, to reach the receiving party. In this context, European regulators have always mandated that operators terminating a call must receive remuneration for this service. This interconnection model configures each user network as a bottleneck, as it is the only having access

cessive termination fees for CAPs. This would be implemented by threatening to put in place non-price discrimination practices, e.g., by blocking some CAPs or degrading their quality of service (QoS). This could also work as a self-preferencing strategy, should an ISP be vertically integrated and provide content or application services, thus favouring their own content provisions by vertically leveraging market power to reduce competition and exclude competing content and applications.

As for the latter, in the US, where the net neutrality debate originated, the risk of self-preferencing by vertically integrated ISPs, with anticompetitive exclusionary effects on other CAPs, was and is one of the main concerns as for the neutrality of the internet.¹⁰ In the US dominant ISPs are vertically integrated with very large content providers (e.g. Comcast merged with NBC-Universal in 2011 and with Sky in 2018, and AT&T merged with Time Warner in 2018). Thus, ISPs in the US offer bundled communications and audio-visual managed services, directly competing with other very large CAPs. As for Europe, in some member states, triple and quadruple-play bundles offered by telcos, including digital television, started to become common, however, in the EU there is not such a widespread vertical integration between internet access providers and audio-visual content as there is in the US.¹¹ In addition, differently from the EU, the US Internet access market is very concentrated end-to-end.¹²

Further to rationales related to the exploiting or leveraging of market power, another important aspect of the net neutrality debate was related to the internet traditions of freedom, openness, and equality.¹³ Indeed, the internet was born and developed under a sort of net neutrality “natural law” or “social contract”, not imposed by regulation but resulting as a spontaneous market outcome from decentralised market interactions.¹⁴ In the EU, the net neutrality debate has been mainly developed under this con-

to the user and thus is essential for the termination of calls to him. See A. Manganelli-A. Nicita, *The governance of Telecoms markets*, cit.

¹⁰ As a matter of fact, the debate around the “neutrality” of networks was originated in the US debate with regard of the relationship between telecom network operator, telecom service providers, on one side, as a means of ensuring market fair competition and between service providers and end-users, on the other side, in order to guarantee end-users access to a “common carrier”. Then it was extended to the relationship between internet access service providers and end-users/content providers, yet applying the same legal base: i.e., Telecommunications act 1996. See M. Orofino, *La declinazione della net-neutrality nel Regolamento europeo 2015/2120. Un primo passo per garantire un’Internet aperta?* in *Federalismi. it*, 2, 2016.

¹¹ The closest case in the EU was the conditioned clearing decision about the Liberty Global/Ziggo merger, for concerns about degrading rival broadcast channels.

¹² M. Cave-I. Vogelsang, *Net Neutrality: An E.U./U.S. Comparison*. *Competition Policy International*, 11(1), 2015, 85 ss.

¹³ Among many, see D.C. Nunziato, *Virtual Freedom: Net neutrality and Free Speech in the Internet Age*, New York, 2009; L. Belli-P. De Filippi, *Net Neutrality Compendium: Human Rights, Free Competition and the Future of the Internet*, Cham, 2016.

¹⁴ These visions were (and for certain aspects still is) at the base of the main cultural motivation “not to regulate the internet”: a place not to be subject to “governments’ rules” yet only to “its own” rules. Of course, it is not trivial who and how these endogenous rules are defined. On these aspects, see A. Manganelli, *Digital Platforms and social networks: plurality of legal orderings, media pluralism and market power*, in *Giurisprudenza costituzionale*, 2, 2023; M. Bassini, *Internet e libertà d’espressione. Prospettive costituzionali e sovranazionali*, Roma, 2019; M. Cuniberti, *Potere e libertà nella rete*, in *Rivista di diritto dei media*, 3, 2018, 39 ss.

ceptual framework, as an end-user's right to access digital services and contents in a universal, equal, and non-discriminatory manner.¹⁵ This is why the EU Open Internet Regulation (2015, OIR)¹⁶, described in details in the following section, did not actually modify the electronic communications' access and interconnection regulatory regime, dealing with market power and anticompetitive discriminations, but those rules regarding universal services and citizens' rights.¹⁷

On this basis, the EU net neutrality regime considers also some technical and efficiency needs for traffic management; nevertheless, neglects the importance of the economic interplays between ISPs and CAPs, their radical evolution, and the impact that this may have on competition dynamics (in the two markets) and ultimately on consumer welfare in the overall digital ecosystem.

This issue is at the very core of this paper, which starts from a description of the EU Open Internet regulation (section 2), then describes the ongoing technical and economic changes calling for a possible legislative review (section 3) and what kind of revisions may be sensible to consider (section 4).

Net neutrality rules have always and continuously been at the centre of policy and regulatory debates. So much so that the UK telecom and media regulator, Ofcom, has recently issued a report assessing the net neutrality regime.¹⁸ Regardless the outcome of that analysis, which is obviously considered in the paper, it is significative that the impact assessment of net neutrality rules in the market has been one of the first post-Brexit policy action undertaken by Ofcom as soon as the EU regulation has ceased to be binding.

Furthermore, it is very recent news that an US appeals court ruled that the US Federal Communications Commission (FCC) did not have legal authority to reinstate net neutrality rules, as it was done by the FCC's 2024 Safeguarding and Securing the Open Internet Declaratory ruling and Order. Despite the clear relevance of the substantive net neutrality debate in the US,¹⁹ it is crucial to highlight that the judicial and regulatory dynamics in the US are not automatically meaningful for the EU context. First, the main US legal/judicial disputes across the last 15 years are very specific to the US legal system. These were mainly about the FCC competence to regulate discriminatory treatments of Internet traffic (as done in 2010, 2015 and 2024²⁰) primarily

¹⁵ Nevertheless, differently from the universal service obligations concerning electronic communication services, i.e., arts. 84 and 85 EECC, the universality and non-discriminatory provision of digital contents was not based onto regulatory obligations imposed on the providers of those services, but on the network intermediaries. In other words, when it comes to online commercial content and application services, net neutrality rules in EU have been designed as Universal service obligations imposed to telcos in order to allow universal access to contents and applications and therefore the possibility for users to buy those services and for CAPs to sell their products/services.

¹⁶ Regulation (EU) 2015/2120 laying down measures concerning open internet access.

¹⁷ Respectively the Access directive, directive 2002/19/EC, and universal service and users' rights directive, directive 2002/22/EC, then both transfused into the European Electronic communications code, directive (EU) 2018/1972.

¹⁸ Ofcom, Statement – *Network Neutrality Review*, 26 October 2023.

¹⁹ Among many, due to the seminal and conflicting ideas of its authors, see, T. Wu-C. Yoo, *Keeping the Internet Neutral? Tim Wu and Christopher Yoo Debate*, in *Federal Communications Law Journal*, 2007.

²⁰ In a nutshell, the 2015 Order, temporarily restored by the 2024 one, established three specific

revolving around the extension of the “common carrier” status to the ISPs under the US Communications Act 1934 and Telecommunications Act 1996.²¹ Second, US net neutrality has been disciplined by the FTC, where no specific rules are set by primary federal legislation, and this has been done through “regulatory policies” that are very dependent upon political dynamics: e.g., 2015/2018/2024 flip-flopping according to government turnovers.²² This implies that those rules were scarcely based on the actual economic and technological context²³ - in contrast to this paper’s objective while looking at the EU legislation.

2. Current EU regulatory approach

The EU Open Internet Regulation (OIR, enacted in 2015) grants end-users with enforceable rights to access and distribute information, contents, and services.²⁴ In doing so, obligations are placed on ISPs to «treat all traffic equally ... without discrimination, restriction or interference, and irrespective of the sender and receiver, the content accessed or distributed, the applications or services used or provided, or the terminal equipment used».²⁵ However, “reasonable” day-to-day traffic management practices are allowed as long as they are (a) transparent, (b) non-discriminatory, (c) proportionate and (d) not based on any commercial considerations but on objectively different technical quality of service requirements for specific traffic categories.

As a preliminary comment, it is important to note here that the distinction between technical and commercial considerations could be inherently problematic. To simplify, when traffic management practices are necessary due to congestion phenomena (so problems of technical matter) network operators always have the alternative of improving QoS by investing and expanding the network capacity rather than engaging in traffic management. However, the decision to invest is an economic decision, which could not be profitably done without considering the overall economic context, where telcos operate.

In any case, these measures may be maintained no longer than is necessary and cannot involve deep packet inspection. Some practices are clearly considered non-reasonable,

prohibitions: (i) no-blocking, (ii) no-throttling, and (iii) no-paid-prioritization, plus (iv) a residual ban on unreasonable discrimination.

²¹ In the latest judicial decision in January 2025, judges cited *Loper Bright Enterprises v. Raimondo*, i.e., the Supreme Court case that in June overturned the so-called “Chevron deference”: this means courts no longer need to follow FCC’s interpretation (or other federal agencies’) to apply legal provisions characterised by a certain level of ambiguity. As a comment: this seems particularly appropriate in order to provide some legal certainty and stability in context where an administrative agency continuously changes its approach/interpretation. As for the debate about “common carrier”, see: C. Yoo, *Is there a Role for Common Carriage in an Internet-based World?*, in *Houston Law Review*, 51, 2, 2013, 545 ss.

²² Those are (i) 2015 Open Internet Order (based on Obama’s “mandate”), (ii) 2018 Restoring Internet Freedom Order (based on Trump’s “mandate”, and lastly (iii) 2024 Safeguarding and Securing the Open Internet Declaratory ruling and Order (based on Biden’s “mandate”).

²³ See P. Damiani, *The open Internet vs. net neutrality and the free Internet*, in *Federalismi.it*, 8, 2019.

²⁴ Art 3(1) OIR - Safeguarding of open internet access

²⁵ Art 3(3) OIR.

should they «block, slow down, alter, restrict, interfere with, degrade or discriminate between specific content, applications or services». There are three general exceptions to this general rule where (i) compliance with legal obligations, (ii) network integrity and (iii) congestion management in exceptional and temporary situations are involved. The exception (iii), i.e., network congestion, is related to the fact that data traffic volumes over the network are continuously skyrocketing and networks, despite the ongoing technical improvements, may not be able to operate effectively and ensure contractual commitments for the higher quality services are met. Therefore, in certain circumstance, specifically in times of congestion, it may be necessary to apply traffic management measures to differentiate between the different tiers of service. The current guidelines do not explicitly confirm that such an approach to traffic management would be permissible, since current rules and the BEREC guidelines²⁶ allow ISPs to go beyond reasonable traffic management if necessary and only for as long as necessary, in order to prevent network congestion and mitigate the effects of exceptional or temporary network congestion, provided that equivalent categories of traffic are treated equally. Therefore, according to BEREC guidelines, when there is recurrent and more long-lasting network congestion, ISPs cannot apply traffic management practices but must invest to expand their network capacity.²⁷

This positioning is clearly reinforcing the point made earlier about the overlap between technical and business considerations, taking an economic decision that could be disregarding all the efficiency and welfare aspects. Indeed, installing more network capacity just to handle peak load traffic leads to private costs for the ISPs as well as significant social costs.²⁸

Regulation also allows for the provision of *specialised services*, deemed as those services «optimised for specific content, applications or services ... where the optimisation is necessary in order to meet requirements of the content, applications or services for a specific level of quality»²⁹ or, in other words, those services that need to be carried out at a specific level of quality that cannot be assured by the standard best-effort delivery. The regulation defines specific safeguards to be respected for the provision of specialised services to ensure that the open Internet is not negatively affected. Specialised services (a) can be satisfied by the network capacity residual to any IAS provided; (b)

²⁶ BEREC, *Guidelines on the Implementation by National Regulators of European Net Neutrality Rules*, BoR (16) 127, and afterwards BoR (20) 112, and lately BoR (22) 81. In Italy, in order to avoid network congestion resulting from traffic peaks and a degradation of quality of service for all internet customers, the national regulatory authority AGCOM required DAZN, which broadcasts “Serie A” football matches over the internet, to provide ISPs with equipment to be integrated into their networks to handle a substantial share of the overall DAZN-originated live streaming data traffic (AGCOM decision n. 206/21/CONS). AGCOM’s decision aimed to preserve network integrity and protect consumers, yet this could not be based and refer to the current net neutrality rules. In making this order AGCOM, giving an extensive interpretation of some Code provisions, considered the CDN as subject to the electronic communications code, including the general authorisation regime. Afterwards, a government’s legal provision gave AGCOM’s decision a more solid legal basis.

²⁷ BEREC 2022 NN guidelines, para. 93.

²⁸ For example, because more cell towers need to be installed in somebody’s neighbourhood (often appealed by citizen’s initiatives), higher energy consumption and more electromagnetic interference. See J. Kramer-M. Peitz, *A fresh look at zero-rating*, in *Telecommunications Policy*, 42(7), 2018, 501 ss.

²⁹ Art 3(5) OIR.

are not usable or offered as a replacement for IAS; (c) are not to the detriment of the availability or general quality of the IAS for end-users; and (d) are optimised for specific content, applications or services, and that optimisation is objectively necessary to meet requirements for a specific level of quality.

Furthermore, the regulation defines transparency obligations for providers of internet access services additional to those existing for electronic communication service providers.³⁰ In particular, contracts for internet access services must include easily accessible, accurate, meaningful and comparable information, covering (a) any traffic management measures used, and any impact on the end-user (e.g., quality of internet access, end-user privacy and personal data protection); (b) any data caps, speed and other quality of service parameters which may in practice impact internet access; (c) how any specialised services, to which the end user subscribes, might in practice affect the same end-user's internet access services; (d) the download and upload speed of internet access services (with different metrics depending on fixed or mobile network); and (e) the remedies available to the consumer in case of any regular discrepancy between the actual performance of the internet access service and the contractually agreed on one.

As for enforcement, national regulators are empowered to closely monitor market developments and assess traffic management, commercial agreements and the compliance with transparency obligations in order to ensure the availability of non-discriminatory and transparent internet access at levels of quality that reflect advances in technology. For this purpose, national regulators may impose minimum quality of service requirements on internet access providers and other appropriate measures to ensure that all end-users enjoy an open internet access service. They must report annually on their findings to the Commission and the BEREC.³¹ Moreover, according to the regulation provisions, in order to enhance a consistent application of the regulation, BEREC drew up detailed guidelines, in 2016, 2020 and 2022, which national regulators must take strictly into account.³²

As for the commercial relationship between telcos and end-users, the OIR explicitly established the freedom to conclude agreements between ISPs and end-users relating to commercial and technical conditions, as well as IAS aspects regarding price, data volumes or speed, and any commercial practices. Nevertheless, such agreements and commercial practices must not represent a limitation in the exercising of end-user rights and, consequently, circumvent provisions safeguarding open internet access.³³ In this context, one of the main points of debate about net neutrality concerned the zero-rating, which is a commercial practice whereby an ISP does not subtract data usage associated with specific content or a class of content from a customer's data allowance.

³⁰ Art. 4 OIR

³¹ Under art. 5 OIR, NRAs have published so far three set of yearly report, which have been sent to the Commission and BEREC.

³² BEREC, *Guidelines on the Implementation by National Regulators of European Net Neutrality Rules*, BoR (16) 127, and afterwards BoR (20) 112, and lately BoR (22) 81.

³³ Recital 7 and art. 3(2) OIR.

Zero rating practices are based on data cap usage commercial practices. The latter are not covered by net neutrality rules and are normally allowed as internet connectivity retail markets are not regulated. A data cap is a legitimate pricing strategy as well as a measure to somehow avoid congestion, yet also create an artificial scarcity, making different content work as substitutes for end-users and, thus, intensifying the competition among content providers.³⁴ As for the general case, in this context of data cap commercial offers, zero-rating represents a contingent competitive concern where a vertically integrated ISP would exempt its own traffic, in order to favour its content. A connected yet different issue is that of zero-rating agreements with a third-party CAP. In this situation, data caps could induce CAPs to compete for the “fast/zero-rated lane”. In this competition, larger CAPs would likely to prevail, also because of their must-have contents, usually in exchange of prioritisation or data-free payment. So, by prohibiting zero rating, policy makers want to avoid large CAPs locking-in users. Yet again an obligation aimed to impede large CAPs exertion of market power is however imposed on telcos.

Initially this practice has been considered compatible, on a case-by-case basis, with net neutrality regulation (2016 and 2020 BEREC net neutrality guidelines). Under those BEREC guidelines only some practices were clearly prohibited – for example, those where all applications are blocked or slowed down once the data cap is reached, except for the zero-rated application(s). Other practices were considered in need of a specific operational assessment to be carried out by NRAs using the following criteria: (a) whether the practices circumvent the general aims of the regulation (to «safeguard equal and non-discriminatory treatment of traffic» and to «guarantee the continued functioning of the internet ecosystem as an engine of innovation»); (b) the market positions of the ISPs and CAPs involved; (c) any distorting effects on end-user choice, both for applications and CAPs; and d) the scale of the practice and the existence of alternatives.

In 2021, the Court of Justice of the European Union (CJEU) issued few rulings that found zero-rating offers to be unavoidably in breach of the requirement of equal treatment of traffic in Article 3(3).³⁵ The Court based its decision in part because these programs were based on commercial considerations rather than objectively different technical differences for specific categories of traffic. Subsequently, in June 2022, BEREC revised its Guidelines to reflect these rulings.

³⁴ Economides N, Hermalin E (2015) The Strategic Use of Download Limits by a Monopoly Platform. *RAND Journal of Economics*, 46(2), 297–327.

³⁵ ECJ, C-807/18 and C-39/19, *Telenor Magyarország* (2020), § 52; C-854/19, *Vodafone* (roaming) (2021), § 28; C-5/20, *Vodafone* (tethering) (2021), § 24; and C-34/20, *Deutsche Telekom* (throttling) (2021), §. 52. See G. D’Ippolito-M. Monti, *Net neutrality e “tariffe zero”: la convergenza delle esigenze democratiche e di mercato*, in *Rivista di diritto dei media*, 2, 2021, 256 ss.; F. Donati, *Net Neutrality e zero rating nel nuovo assetto delle comunicazioni elettroniche*, in T.E. Frosini-O. Pollicino-E. Apa-M. Bassini (a cura di), *Diritti e libertà in Internet*, Milano, 2017, 185 ss.

3. Why a revision of the Open Internet Regulation could be considered

The EU commission in its recent report on the net neutrality rules enforcement has highlighted that OIR «was deliberately conceived as a principle-based set of rules that could be applied to the foreseeable development of new technologies».³⁶ Therefore, in principle, this would allow an evolutive interpretation that could fit any technical and market transformations; furthermore, to reduce the ex-ante uncertainty (deriving from the utilisation of general principles) and not to inhibit innovation, BEREC has been empowered to provide guidelines.³⁷ Nonetheless, the EU commission implementation report signalled that: «Greater legal certainty could therefore be beneficial to both innovators and consumers in the future».³⁸

As mentioned, the rules currently in force allow for ISPs and CAPs to offer ‘specialised services’ and this seems to be the crucial point in order to understand whether current rules inhibit telecom industry to fully deploy new technologies capabilities and consequently affect end-users’ choice and welfare. In this regard, two main points of concerns rely upon (i) legal uncertainty created by the current case-by-case approach embraced by the BEREC guidelines, and (ii) possible restrictive interpretation of the criteria concerning the detriment for the general quality of the IAS for end-users, for which there is no clear definition.

In addition, guidelines cannot modify the fundamental approach of the regulation, tending to overlook the economic interplays between ISPs and CAPs and consequently at those crucial technological and market changes having took place in last years.

Another assessment, with a wider and unconstrained perspective, has been done by the UK regulator Ofcom, which was considering for revision the overall net neutrality regime in order to clarify the applicable rules and relax some constraints for ISP activity. At the basis of Ofcom’s analysis stands the fact that the current rules «may be restricting their ability to innovate, develop new services and manage their networks. This could lead to poor consumer outcomes, including higher costs, or consumers not benefiting from new services as quickly as they should, or at all. These potential downsides might become more pronounced in the future, as people’s use of online services expands, traffic increases, and more demands are placed on networks».³⁹ Furthermore, within its market assessment, Ofcom noted that, within the current EU approach, «net neutrality rules limit the actions ISPs can take, but do not restrict other parties in the value chain. Since the rules were put in place, players with strong market positions have developed throughout the internet value chain and are not constrained

³⁶ European Commission, *Report on the implementation of the open internet access provisions of Regulation (EU) 2015/2120* – COM (2023) 233 final

³⁷ BEREC, *Guidelines on the Implementation by National Regulators of European Net Neutrality Rules*, cit.

³⁸ European Commission, *Report on the implementation of the open internet access provisions of Regulation (EU) 2015/2120*, cit.

³⁹ Ofcom, *Net Neutrality review*, cit.

in the same way as ISPs by the net neutrality rules».⁴⁰

Therefore, it seems crucial to assess technological, market and business models changes that occurred in the sector that may undermine assumptions underlying the current net neutrality rules.

3.1. Technological changes weakening the OIR's assumptions

As anticipated the main rhetoric about net neutrality is associated with individual rights based on a conceptualisation of the internet ecosystem as composed of decentralised and atomistic users that symmetrically exchange traffic, information and content.

Nowadays, this vision of the web as a place where individuals and small enterprises interact in a decentralised way is no longer true due to the radical transformations the internet and the web have undergone. These transformations have involved the internet structure, shifting from a decentralised setting toward a centralised one, where extremely large digital players have enormous scale and are active in many digital service and products markets, including private electronic communications networks. Consequently, these transformations also profoundly affected the data traffic, tendentially shifting from symmetric flow to heavily asymmetric.

Indeed, today, the great majority of internet data packets are related to contents and services which are mostly unidirectional - from content providers to users - and a drastic increase in traffic volume, with low latency requirement is happening and is likely to continue in the future.⁴¹ These shifts imply that, on one side, traffic management practices could have a technical motivation related to the efficient usage of the network (and this element is crucial for 5G networks) and, on the other side, that traffic flows are usually asymmetric and related to the activity of few market actors⁴² – which are anyway provided by the the OIR with the same kind of protective relationship vis à vis ISPs reserved to an individual end-users.

As for the first point, progressive deployments of 5G networks have been bringing increased opportunities to provide different services and innovations strictly interlinked with applications and use cases that differ significantly in their network requirements. Indeed, 5G mobile broadband is mostly about differentiation of quality of service (QoS) and quality of experience (QoE), especially looking at “network slicing”.⁴³ In

⁴⁰ *Ibidem*.

⁴¹ For detailed general reference, see Analysys Mason, *The impact of tech companies' network investment on the economics of broadband ISPs*, 2022, October 2022, 23; TeleGeography, *The State of the Network*, 2023 Edition, 10; Sandvine, *Global Internet Phenomena Report*, 2023, 7; Ericsson Mobility Report, 2022, 18; Sandvine, *Global Internet Phenomena Report*, 2023, 22; Arthur D. Little, *The Evolution of Data Growth in Europe*, Report 2023, 18.

⁴² In 2022, almost half of data traffic (precisely 47%) has been generated by only 6 big digital players (i.e., Netflix, Google, Facebook, Amazon, Apple and Microsoft). See, Sandvine, *Global Internet Phenomena Report*, cit.

⁴³ As part of this new business model, 5G is also being deployed around a new technological approach

principle, this is in contrast to the “best-effort” approach underlying the original net neutrality concept, which could not embrace QoS and QoE differentiation, as efficient practices to be allowed and encouraged as much as possible.

It is true, as mentioned, the rules currently in force allow for ISPs and CAPs to offer ‘specialised services’; however, possible interpretations of the EU’s OIR might be inconsistent with network slicing and other innovative approach to 5G.⁴⁴

In addition, other technical issues may drastically change the assumptions underlying the current net neutrality rules in the EU. Nowadays it seems that not solely ISPs can influence the traffic flow. In this regard, an open question originating from the technological development in mobile 5G communications concerns whether other subjects, e.g., operating system providers (i.e., mainly Google Android and Apple iOS), could somehow control the different network’s slices.⁴⁵ Indeed, to correctly identify and transmit traffic according to the specifications of the slices, an interaction between the network and the device is necessary. The OS players cover a crucial role, as the routing of the application to the slice depends on the OS of the end-user, and in some situations the operator must apply a configuration designed by the OS provider to connect the application and the slice. This being said, given the concentration of the consumer market for device OS,⁴⁶ there is a risk that major OS providers are in a position *de facto* to impose standardisation to the slicing identification mechanism and that, as an effect, operators may lose part of the control over which traffic corresponds to each slice.

In the same fashion, content delivery networks (CDNs)⁴⁷ enable to some extent service differentiation by managing traffic via private networks and ensure content is

known as network slicing, which enables a network to be divided into multiple subnetworks (called slices) that different users can use simultaneously in much the same manner that cloud computing allows multiple virtual computers to share the same servers. Network slicing creates several benefits. Resource sharing allows more efficient utilization than would occur if each resource were dedicated to a single user or use case. Sharing efficiency is particularly important for technologies that, like 5G, depend on lower-powered microcells that necessarily serve fewer customers. In addition, individual slices can each be tailored to provide different levels of quality of service (QoS) to each application.

⁴⁴ C. Yoo, *Network slicing and net neutrality*, in *Telecommunications Policy*, 48(2), 2024.

⁴⁵ BEREC, *Report on the entry of large content and application providers into the markets for electronic communications networks and services*, 2024 - BoR (24) 139.

⁴⁶ As stated in BEREC, *Report on the Internet Ecosystem*, 2022 - BoR (22) 167, the mobile OS market in Europe is mainly split between Android (63.6% market share by 2022) and iOS (35.7%). Apple iOS and Google Android respectively define the two main mobile ecosystems and have been recently qualified as gatekeepers under the DMA. Indeed, despite a complex and layered structure consisting of devices, operating systems, and applications, mobile ecosystems are currently an oligopolistic market where two players (i.e., Apple and Google) own a gatekeeping position, being responsible for the leading mobile operating systems (iOS and Android), app stores (App Store and Google Play), and web browsers (Safari and Chrome). Because of such a strategic market status and their vertically integrated value chain, Apple and Google control access to mobile ecosystems, setting rules for (end and business) users, and compete with business users operating on their platforms.

⁴⁷ A CDN is a network optimised for the distribution of digital content, which therefore increase the performance of the internet (access) network. CAPs are the main customers of a commercial CDN provider (deployed by a third party, neither an ISP nor a CAP). However, in the last few years, the largest CAPs have been investing heavily in their own CDN infrastructure (in-house CDN). In addition to in-house CDNs, large CAPs, such as Amazon, Alibaba, Google, and Microsoft are also commercially operating CDNs to support services that are used by their cloud customers.

hosted as close to the end-user as possible to guarantee certain quality levels.⁴⁸ From an user experience perspective, these and other mechanisms can act as ‘technological substitutes’ for network management by ISPs, ensuring higher quality of experience perceived by the end-user.⁴⁹ The fact that large CAPs ‘buy’ services from a commercial CDN or ‘make’ that service, by vertically integrating, can be seen under an economic perspective as a form of ‘paid prioritization’ although traffic is not prioritized in the network layer by ISPs, and thus it is not subject to OIR.⁵⁰

In this regard, the recent Commission’s White paper on digital infrastructure focuses on the fact that the current digital ecosystem is the ongoing results of extensions and overlapping of previously neatly separated value chains: «this new model of network and service provision relies not only on traditional electronic communications equipment, network and service providers but also on a complex ecosystem of cloud, edge, content, software and component suppliers, amongst others. The traditional boundaries between these various actors are increasingly blurred ...»⁵¹

Therefore, if ISPs are no longer the only type of market players that could influence end-users’ internet experience, growing significance should be attached in what other players can do in the extended value chain. This is not trivial, particularly considering, that most of those players (as the OS or integrated subject with in-house CDNs), are considered CAPs under the EU open internet regulation.

3.2. Market changes undercutting OIR’s assumptions

One of the most important shifts in the internet landscape, as anticipated, revolves around the centralisation of the economic transactions on the internet/digital ecosystem. Indeed, digital markets and services are highly concentrated, and few large CAPs have significant and entrenched market power. Those CAPs have humongous scale, wide scope of services provided (enveloping end-users) and very strong network effects (both direct and indirect) and provide “must-have” contents and applications to end-users, on one side of the market, and business-users, on the other side of the market.⁵² Moreover, before the recent enactment of the Digital Markets Act (DMA) and Digital Service Act (DSA),⁵³ very large Online Platforms/gatekeepers had been

⁴⁸ V. Stocker-G. Smaragdakis-W. Lehr-S. Bauer, *The Growing Complexity of Content Delivery Networks: Challenges and Implications for the Internet Ecosystem*, in *Telecommunications Policy*, 41(10), 2017, 1003 ss. However, on-net CDNs allow to reduce cooperatively capacity costs for ISPs by locating content closer to end-users.

⁴⁹ W. Briglauer, *Efficiency and Effectiveness of Net Neutrality Rules in the Mobile Sector: Relevant Developments and State of the Empirical Literature*, 2024, in *wn.ac.at*.

⁵⁰ T. Garrett-L.E. Setenareski-L.M. Peres-L.C.E. Bona-E.P. Duarte, *A survey of network neutrality regulations worldwide*, in *Computer Law & Security Review*, 44, 2022.

⁵¹ European Commission, *White paper on How to master Europe’s digital infrastructure needs?*, 2024, COM(2024) 81 final

⁵² Often, very large CAPs are online platform structured as two (or multi) sided markets, thus intermediating between end users and business users. See A. Manganelli-A. Nicita, *Regulating digital markets*, cit.

⁵³ As well known, a large number of very important pieces of legislation have been adopted by EU

subject to a light-handed regulation.

Therefore, in such a situation, notwithstanding ISPs' "termination bottleneck", such very large CAPs have a strong countervailing bargaining power vis à vis ISPs that implies a strong constraint of ISPs market power and their ability to exploit it.⁵⁴ Actually, considering the fact that some of the largest CAPs are gatekeepers, i.e., a gateway for business to reach end-users, ISPs could actually be in a bargaining disadvantage.

Here, an important asymmetry in the net neutrality approach can be described when there are dominant CAPs with must-have contents: net neutrality prohibitions are one-way directional, i.e., put obligations upon ISPs not to discriminate among CAPs traffic, whereas there are, in principle, no limitations for CAPs should they want to discriminate among ISPs. Although it could be assumed that CAPs have no incentives for discrimination, at the moment, in a perspective (not so far) scenario they could have⁵⁵, namely in situations (partially already in place) of (i) extension of the value chain, (ii) entry and vertical integration of large CAPs into the markets for electronic communications and (iii) progressive transformation of interactions between CAPs and ISPs in this extended ecosystem, from complements to substitutes.⁵⁶

To be sure, an asymmetric bargaining power do not represent *per se* a market failure and, in principle, do not require any specific regulatory intervention. However, the point here is not having an additional regulatory intervention, rather modifying the existing one. As a matter of fact, what could be seen as a market failure is the 'market incompleteness', mainly caused by the current regulatory approach, which does not allow certain market transactions between ISPs and CAPs to take place (transactions

legislator, in order to tackle contestability, transparency and fairness issues in digital markets, *in primis*, Digital Markets Act (DMA) and Digital Services Act (DSA). The recent approval of DMA and DSA has introduced a more stringent set of rules for very large online platforms (as defined by DSA) and gatekeepers (as defined by the DMA), however neither of these new regulatory regimes is really tackling the significant concentration of market power. See A. Manganelli, *The interplay between telecommunications operators and digital platforms in an evolving digital ecosystem*, in *Journal of Law, Market & Innovation*, 3(2), 2024, 113 ss.

⁵⁴ In this regard, it is very interesting the litigation of Deutsche Telekom v. Meta: the German ISP and the global CAP had a contractual agreement under which DT would deliver data traffic between Meta and its end-users via direct connections for a fee ("paid peering"). During the coronavirus crisis, Meta stopped making these payments, then Deutsche Telekom filed a lawsuit against this and was upheld by the Cologne Regional Court (case 33 O 178/23). In that context, Meta charged DT for exploiting its dominant position on the IAS by charging excessive fees. The court, however, did not find that Deutsche Telekom abused its market power by charging excessive fees for the handling of data traffic on its internet backbone and ordered Meta to honour its contract on paid peering fees. The court in Cologne considered the different bargaining power of the two companies on the market for IP data transit services, Meta's dominant position in social networks, and its designation by the Bundeskartellamt (decision B 6 – 27/21) as having «paramount significance for competition across markets» pursuant to Section 19a(1) German Competition Act (GWB).

⁵⁵ For example, considering a scenario where CAPs start to provide IAS (e.g., Amazon via its low orbit satellite, Project Kuiper), under a vertical integration setting CAPs with must-have contents may have economic incentives to discriminate between IAS, either for extracting some rents (paying for the content and services) or for favouring its own IAS. Of course, if CAPS are dominant player, provisions related to abuse of dominant position put some constraints against an abusive vertical leveraging of market power.

⁵⁶ See, BEREC, *Report on the entry of large content and application providers into the markets for electronic communications networks and services* - BoR (24) 139.

that may well be efficiency and welfare enhancing). Therefore, a possible intervention should be aimed to correct a possible “regulatory failure”. Indeed, these impediments are not only depending on market dynamics but are also based on legal provisions, since net neutrality prohibitions have augmented the existing asymmetry.

In addition, in most circumstances ISPs are “competitive bottlenecks”⁵⁷ meaning that ISPs receive competitive constraints not only from very large CAPs but also from other ISPs. Indeed, competition between ISPs for end-users, mainly in the mobile internet connection market, yet also for the fixed lines, has strongly developed in the telecom markets, due to decades of pro-competitive access regulation.⁵⁸ Consequently, any activity by ISPs blocking or degrading the quality of must-have contents/applications to their subscribers, or even of other contents/applications, would be ‘sanctioned’ by (empowered) end-users by switching to another ISP.⁵⁹ Just think of an ISP blocking or degrading the QoS of Google search, Youtube, Netflix, or Facebook for its users; its customer base would shrink very quickly.

As mentioned, telecommunications operators have been subject for more than two decades to pro-competitive access regulation on the supply side,⁶⁰ which has increase competition on fixed and mobile IAS markets: this implies that currently ISPs would have no incentive to put in place traffic management to deteriorate the end-users’ experience and restrict their choice;

Instead, the regulatory philosophy underlying the OIR is one of definition of a minimum quality, which is a typical quality regulation in a monopolistic market, aimed to strictly protect end-users having no alternative choices but to be subject to a degradation of quality, as if decades of pro-competitive regulation haven’t had any effect in the electronic communications market. Indeed, as described, NRAs can impose minimum quality of service requirements on internet access providers to ensure that all end-users enjoy an open internet access service. On the contrary, it would be effective to properly empower and inform consumers and enable them to react and sanction quality variation for their services. Consequently, also moving away from a commoditisation of the industry, where the current regulatory approach has pushed it for the last years.

Indeed, thinking “out of the (regulatory) box”, if one frames the net neutrality concepts and dynamics, transferring telcos’ intermediary function into the digital platforms’ intermediation, the asymmetric treatment emerges again: digital platforms, for example search engines or social networks, can prioritise contents that pay for a “fast

⁵⁷ This concept has been profoundly described by M. Armstrong, *The theory of access pricing in Telecommunications*, in M. Cave et al. (eds.), *Handbook of Telecommunications Economics*, Leeds, 2002.

⁵⁸ In the Electronic communications sector, downstream competition in the market for end-user services and the promotion of a level playing field is achieved by introducing asymmetric regulation, i.e. special obligations imposed only on the incumbent network operator to counterbalance its market power and competitive advantage. In the first instance, this is the obligation imposed on the former monopolist to give new entrants access to its network under price and quality conditions set by the regulator. Arts. 69 – 74 EECC

⁵⁹ M. Cave-I. Vogelsang, *Net Neutrality*, cit.; regarding any possible coordination in this respect there are competition law instruments in place.

⁶⁰ Along with a strict enforcement of merger regulation. Impeding any consolidation.

lane”, i.e., sponsored contents. The digital regulations focus on transparency and users’ awareness, whereas paid prioritisation is not excluded, as an essential part of those platforms’ business models.⁶¹ Notwithstanding, as anticipated, OIR prohibits to ISPs any commercial discrimination of traffic, even if the end-users would ask for it.

That’s true that digital platforms are not considered network infrastructures, yet, on one side, they are using extensively private network infrastructures (or even public one, e.g., NIICS, and low orbit satellites), and on the other side, traditional infrastructure networks have undergone a path of extensive network functions virtualization.⁶² It is evident that differences are shrinking.

These cases exemplify that current rules have no systemic approach for net neutrality policy and target only one part of the extended value chain that characterised the current digital ecosystem, where a much wider set of players interplay. Indeed, as expressed in the EU Commission white paper: «yesterday’s separation between ‘traditional’ electronic communications networks/service providers and cloud or other digital service providers will tomorrow be superseded by a complex converged ecosystem. These developments raise the question whether the players in such converged ecosystem should not fall under equivalent rules applicable to all and whether the demand side (i.e. end-users and in particular consumers) should not benefit from equivalent rights».⁶³

3.3. Net Neutrality when CAP’s services are increasingly substitutes

This asymmetric approach creates a regulatory fragmentation which may be unfit for the current converged ecosystem. This fragmentation can be also explained with the existing (yet evolving) regulatory distinction of services: (a) electronic communications disciplined by the EECC, (ii) audio-visual media content, regulated by the Au-

⁶¹ As far as any alteration of the “organic” ranking is transparent for end-users [art. 3(7a) Omnibus Directive; art. 5(3) “Ranking” and art. 7 “Differentiated treatment” of the P2B Regulation; art. 26 “Advertising on online platforms” DSA]. and do not favour a dominant platform’s own-content vis a vis third-party one (self-preferencing) [art. 6(5) DMA]. Platform to Business (P2B) regulation: regulation (EU) 2019/1150 on promoting fairness and transparency for business users of online intermediation services; and the Omnibus Directive: directive (EU) 2019/2161 as regards the better enforcement and modernisation of Union consumer protection rules

⁶² Virtualization allows network functions and resources to be delivered independently from hardware as virtual networks. Network Function Virtualization can be shared in the physical network by a number of services. Therefore, network functions are no longer physically located. Moreover, virtualization of core network functions allows operators to manage them in the cloud, using either dedicated SDN Telco Cloud infrastructure (which enables the functions of a network to be controlled by software) or virtual private networks on public clouds. Plum Consulting, *BEREC external study on the trends and cloudification, virtualization, and softwarization in telecommunications*, 2023 - BoR (23) 208.

⁶³ European Commission, White Paper, 2024.

audio-visual Media Directive (AVMS) ⁶⁴ and (iii) information society services (ISS), which is now proving progressively inadequate as it frames competing (or anyway interplaying) services into completely different and separate regulatory regimes.

CAPs usually provide service (b) and (c), however, as seen, they are increasingly providing also electronic communications services and (using private) network. In this context, this asymmetric treatment is even more striking when referred to CAPs' services that do not work as complements vis à vis Telecom traditional communications services but are substitutes.

As a matter of fact, one of the first "extension" of CAPs within the traditional telecom value chain was related to VOIP communications services, which was one (or the only) economic triggers in EU for development of Net Neutrality rules in order to avoid the possible throttling/blocking practices by telcos of interpersonal communications VOIP services (i.e., Skype). Indeed, IP interpersonal communication services and IAS are in a vertical relationship and upstream discriminations could have been aimed to favour Telcos' own interpersonal communication services (which have been always provided).

However, the paramount difference is that in this case the possible discrimination rationale is not based on the provision of contents and applications by telcos, but on the fact that a content/application 'became' an electronic communication service, as recognised later by the current regulatory framework, defining the Number-independent Interpersonal Communication Services (NIICS).⁶⁵

This approach allowed CAPs to enter the ECS market and offer competing ECS services, being subject to a much lighter regulatory regime, whilst being protected under the OIR, as a (business) user of internet access services, thus working as a complementor. The asymmetry here is evident if one considers that under an economic perspective, all types of different upstream and downstream electronic communications services are always in a complementarity relationship, also those provided by an access-seeker and an internet access services provider. In this situation, the EECC framework imposes access and non-discrimination obligations yet implying a remuneration for the access to the public network (of course, varying it according to the level and type of access to the network).

So, under an economic perspective, it is unclear why an extension of the value chain

⁶⁴ Directive (EU) 2018/1808. An audio-visual media service (AVMS) has the principal purpose to provide programmes, under an editorial responsibility of a media service provider to the general public, in order to inform, entertain or educate, by means of electronic communications networks. An AVMS could be either (a) a television broadcast, i.e., for simultaneous viewing of programmes on the basis of a programme schedule (linear AVMS) or (b) an on-demand AVMS, for the viewing of programmes at the moment chosen by the user and at his/her individual request on the basis of a catalogue of programmes selected by the media service provider (non-linear). A video-sharing platform service has the principal purpose to provide programme or user-generated by means of electronic communications, for which the platform does not have editorial responsibility.

⁶⁵ EECC distinguishes the interpersonal communication services (ICS) into two sub-categories: (a) number-based ICS services, corresponding to the traditional fixed and mobile voice services, in which the service is connected with numbers in numbering plans, assigned by public authorities for the routing of traffic, and not only as a user identification, and (b) the ICS services independent of the number, provided by digital platforms (e.g., Skype, WhatsApp, Facebook messenger) where the number is only the user's identification and not assigned and used for routing operations.

should imply such a substantial regulatory asymmetry, especially when dealing with electronic communications services. A net-neutrality-type of rule could thus also be (better and more consistently) framed under an access regulation viewpoint, prohibiting, as it is the case under EECC rules, upstream operators with significant market power (SMP) /bottleneck holders to discriminate an access seeker *vis a vis* its own downstream services. Of course, at this aim, NIICS providers would be necessarily subject to the EECC access and entry regulation.⁶⁶

Should it be the case, it was also suggested to define data transmission and termination as relevant markets with a SMP identification and cost-oriented price obligations as remedies.⁶⁷ Indeed, a direct restraint on ISP market power, taking into account the two sides of the access market, would represent a less distortive solution and be more consistent with the overall regulatory framework than any net neutrality measure. For example, Net Neutrality as a zero-pricing rule can be considered a constraint on the business model of the ISP, as two-sided platform (intermediating between CAPs and end-users), forcing it to adopt a one-sided business model (i.e. charging only users and not CAPs.)

At the end, the current approach seems to represent a weakness of the current regulatory framework, deriving from the mere juxtaposition of uncoordinated pieces of legislation - that should be instead seen now as a part of a convergent extended framework for the digital ecosystem.

4. What kind of revision could be considered

4.1. Is there (still) any need for net neutrality rules?

In a context of crucial technological and market evolutions, a primary reflection should be devoted to whether net neutrality rules are still needed or whether there is room for an efficient radical reform of the principles underlying the current OIR. In addition to more recent changes, many of the economic effects of Net Neutrality rules have never been fully considered, *ab origine*, by the current EU legislation. Indeed, the OIR looked at net neutrality as a policy almost exclusively concerning protection of end-users' rights, which of course is a paramount objective, yet not the sole one. Indeed, due to this defect, some economic analysis really questioned at the basis the positive impact of net neutrality rules. In this regard, some economic literature has focused on the question of whether a competitive IAS market could make net neutrality rules (e.g., prohibition of payment against a "fast lane") redundant in terms of preventing anti-competitive behaviour. Recent theories have generally supported the

⁶⁶ In some member states, there have been proposals to extend entry and access/interconnection regulation to NIICS, e.g., in Italy, where now, the national transposition of EECC defines a third intermediary category of Interpersonal Communications Services, i.e., «ICS that makes an indirect use of numbering resources», which is an ICS that uses as identifier numbering resources assigned to another authorised operator.

⁶⁷ P. Larouche, *Network Neutrality: The Global Dimension*, in M. Burri-T. Cottier (eds.), *Trade Governance in the Digital Age: World Trade Forum*, Cambridge, 2012, 91 ss.

idea that lifting net neutrality rules on competing platforms is welfare-increasing.⁶⁸ Competition may influence the desirability of net neutrality provision concerning investments in broadband capacity and content innovation. In allowing a payment fast lane, both would increase compared to a net neutrality regime.⁶⁹ Empirical contributions are few, yet a very recent literature review shows that net neutrality regulations have negative impacts on high-speed network investment by (wireline) ISPs, which is in line with most theoretical contribution, and, in the long term, is likely to imply negative welfare effects.⁷⁰

Nevertheless, a balanced assessment must not fall in the opposite extreme and overlook some of the core objectives of net neutrality rules, i.e., maintaining an open internet and protecting consumer freedom of choice for contents. For example, particular attention should be given to safeguarding audio-visual media services of general interest.⁷¹ Indeed, «protecting and promoting a neutral and open Internet where content, services, and applications are not unjustifiably blocked or degraded»⁷² should remain an overarching objective for the Digital Decade.⁷³ So, the main point is to aim for rules which allow to achieve these objectives, by minimising the distortive impact on economic and market dynamics.⁷⁴ In other words, net neutrality rules should embrace a general principle of the EU law: the “proportionality principle”, which is also a well-recognised for the supply side access regulation in the sector.⁷⁵

On the contrary, the OIR and its interpretation clearly moved away from that approach by adopting a “precautionary principle”, thus imposing a strong restriction on regulated entities in view of a maximum probability of effectiveness. However, this approach inevitably leads to the risk of increased costs for the regulated company,

⁶⁸ This outcome is not due to competition reducing the incentives of ISPs to discriminate between content providers, as in the voice call termination, but to the intense competition among ISPs resulting in better prices for end-users and lower overall price distortions.

⁶⁹ M. Bourreau-F. Kourandi-T. Valletti, *Net Neutrality with Competing Internet Platforms*, in *Journal of Industrial Economics*, 63(1), 2015, 30 ss.

⁷⁰ W. Briglauer-K. Gugler-C. Cambini-V. Stocker, *Net neutrality and high-speed broadband networks: evidence from OECD countries*, in *European Journal of Law and Economics*, 55, 2022, 533 ss.; W. Briglauer, *Efficiency and Effectiveness of Net Neutrality Rules in the Mobile Sector*, cit.

⁷¹ As for the prominence principle foreseen under art. 7a of the AVMSD and recital 29 of directive 2018/1808/EU. This is because of essential role that AVMS of general interest play in driving media pluralism, freedom of speech and cultural diversity. That special status is very often associated, at national level, with further obligations (such as the provision of newscasts) to better pursue those values and general interest objectives.

⁷² EU Parliament, Council and Commission, *European Declaration on Digital Rights and Principles for the Digital Decade*, 2023.

⁷³ See for example G. De Minico, *Net neutrality e le generazioni future*, in M.R. Allegri-G. D'Ippolito (eds.), *Accesso a Internet e neutralità della rete fra principi costituzionali e regole europee*, Rome, 2017, 159 ss.

⁷⁴ For a similar approach, see P. Damiani, *The open Internet vs. net neutrality and the free Internet*, in *Federalismi.it*, 8, 2019.

⁷⁵ The proportionality principle is a general EU law principle, especially when it comes to economic regulation. Under art. 5(4) TEU, it applies at macro level for the definition of the scope of regulation (in the law-making process), yet this principle always applies at micro level as well, in the enforcement activity, for instance for the access regulation in the EECC, e.g., art. 68(2) «In accordance with the principle of proportionality, a national regulatory authority shall choose the least intrusive way of addressing the problems identified in the market analysis».

inefficiencies in the market and social costs.

A balanced and future-proof call for a neutral network should involve a proportional, dynamic, and systemic response to issues originating from digitalisation, multimedia convergence, network virtualisation and the overall modular structure of the current digital ecosystem.

Here, the idea of ‘ne(x)t neutrality’, that is to define rules aimed to cover all contexts of opacity and non-discrimination in each of the relationships constituting the digital transaction, by assessing substitutability and complementarity of services and preventing or counteracting exertions of power across the whole digital extended value chain, thus considering all the network and ecosystemic effects. Indeed, each digital transaction in the digital ecosystem is multifaceted and entails an array of interdependent bilateral relationships, namely: (i) end-user to end-user (one of which could be a business-user); (ii) end-user to ISP; (iii) End-user (and business user) to CAP; and (iv) ISP to CAP.⁷⁶ Non-discrimination and transparency principles should be applied to each of the above relationships, reflecting a different side of net neutrality. If regulation focus only on one specific side, by imposing strict rules, whereas do not focus on others (or develops rules in an uncoordinated way) it neglects existing interdependences and trade-offs or, worse, unintentionally generate or enhance contractual or market power situations elsewhere.⁷⁷

Ne(x)t neutrality rules and their implementation should therefore be much closer to market analysis and pro-competitive regulation, including the key role played in the market by empowered consumers and end-users.⁷⁸

From what described, it is evident that (i) end-user to ISP relationships have been profoundly disciplined for more than two decades by the EECC (as well as ISP to ISP competitive relationship), (ii) End-user to CAP have started to be regulated recently by the digital legislation (e.g., DSA, P2B, DMA, including also business users⁷⁹) due to the need to discipline very large platforms CAPs market and bargaining power; whereas (iii) ISPs to CAPs are still only regulated, in an asymmetric fashion, by the OIR. This is because ISPs are not business users for digital platforms, so neither the P2B nor the DMA are disciplining that kind of transaction and interactions.⁸⁰

On the contrary, telecom networks could be somehow considered intermediating between end-users and CAPs: some consider telecommunications networks to be a two-sided market, as telco operators sell both connectivity services to end-users and

⁷⁶ Being the first one (i) end-user to end-users related to interaction of social network, iv), in turns, itself multifaceted and complex, involving (i) substitutability; (ii) cooperation and (ii) complementarity relationships BoR (24) 51

⁷⁷ For a similar “preliminary” concern, see M. Orofino, *La declinazione della net-neutrality nel Regolamento europeo 2015/2120. Un primo passo per garantire un’Internet aperta?*, cit.

⁷⁸ A. Manganelli-A. Nicita, *The governance of telecom Markets*, cit.

⁷⁹ Platforms’ business users have a twofold regulatory framing: on one side, they are considered as users, as they actually uses platforms services to reach end-users; yet, they are also considered as potential competitors in the digital ecosystem, where platforms vertically integrate.

⁸⁰ As a matter fact, possibly, art. 6(6) of the Digital Markets Act (DMA) would limit CAPs’ discrimination vis à vis ISPs, but only if those “contents and applications” can be qualified as one of the core platform services and those companies are qualified as gatekeepers.

termination services for content and application providers.⁸¹

4.2. Amending net neutrality regulation: few proposals

A rethinking of OIR rules could be considered, as mentioned, according to principles of ne(x)t neutrality: proportionality, systemic perspective, and end-user's empowerment.

In this respect, policymakers should anyway consider that competition among ISPs tends to provide a safeguard against severe rent extraction and, thus, an abuse of throttling as an exploitative device. Therefore, enforcement of net neutrality rules should always account for the competitive environment, under a proportionality approach. As a general concept, updating net neutrality rules would allow possibilities to differentiate quality which could be beneficial for ISPs, as giving room to move away from pure price competition and allow consumers wider choices for better matching their preferences.

One interesting reference about updating net neutrality obligations is given by the recent Ofcom statement.⁸² In this line, Ofcom underlines that ISPs should be able to offer premium quality services, at a premium price, differentiated from standard quality ones, at a more affordable price, in order to better meet differentiated customers' needs (i.e., customers using high-quality virtual reality application vs users that only browse the internet). This is in line with the current BEREC concept of 'application-agnostic offer', as this differentiation applies to all the content and services accessed by consumers purchasing the offer. ISPs should be also probably allowed to indicate that all content and application with certain characteristic (e.g., on demand video streaming at very-high definition, 4k) could be available only with some premium package, therefore linking it to the concept of «objectively different technical QoS requirement of traffic categories». If those categories of traffic are related with "premium" content/service, charging an additional price to users, a commercial equilibrium between the IAS and Content/Application prices for users could be found – even by possibly framing and considering the differential premium service as a particular form of Premium Rate Service (PRS).⁸³

Moreover, in its statement, Ofcom allows zero-rating offers that are genuinely open to all content providers offering similar services and contents ("class-based offers"), e.g., video streaming content, audio streaming content or social media. Further to that, ISPs should be probably allowed to build retail offers where specific content is treated differently ('content-specific retail offers') when consumers choose for such a differentiation, selecting the specific content (that could be made available by CAPs in a "premium" fashion).

An end-user-empowering approach to net neutrality could be the best way to guarantee a freedom of choice, by allowing the end-users to decide what kind of internet

⁸¹ B. Julien-M. Bouvard, *Fair cost sharing: big tech vs telcos*, 2023, TSE wp n 1376.

⁸² Ofcom, *Net Neutrality review*, cit.

⁸³ *About PRS see ofcom.org.uk.*

access they would prefer, without over restricting the economic and commercial freedom of companies. As the current rules stand, ISPs are restricted to offering only basic packages of service, that ultimately lead, in some circumstances, to limit rather than enhancing consumer choice, and to have some customers subsidising others (e.g., normal vs heavy users). Whereas an enhanced flexibility for operators would give them incentives to innovate and create more bespoke and dynamic services, thus benefiting consumers' choice and welfare and also helping to address their investment needs.

As long as customers truly have a choice – i.e., a competitive market environment and the existence of a portfolio of tariff options and comparable plan where all content is unthrottled or not blocked – consumers could be allowed to voluntarily opt for differentiating certain traffic categories.⁸⁴ A simple solution could be to introduce an application-agnostic 'anchor product' which all users can choose if they want. With that in place, ISPs can offer all type of differentiated services in addition to that, without affecting, yet enhancing, consumers' freedom of choice. If users expressly choose those alternatives, it means they are better off than with the anchor product. This approach should prevail over the concept of compulsory application-agnostic offer, which at the end could be limit consumer sovereignty and empowerment, not allowing them to reach those contents with that differentiated quality they would prefer. In this regard, it should be reminded that OIR art. 3(1) protection apply to all end-users, comprising both consumers and businesses.⁸⁵

In other words, there is a trade-off between art. 3(1) and art. 3(3) of OIR, requiring some balancing and a end-user-empowering approach to net neutrality seems a balanced solution allowing to reach the most efficient outcome.

In this regard, it seems important to underline that the same art. 3(1) of the OIR gives end-users the possibility to choose for their own terminal equipment,⁸⁶ which is considered a fundamental element of net neutrality. Therefore, it would be quite incoherent to consider end-user enough sophisticated and well informed to take advantage from a personal choice of terminal equipment (if they prefer not to buy and use the default standard product supplied by ISP), which is a quite technical and sophisticated choice, where, at the same time, considering in a negative way a possibility for them to choose how their connection could be configured in terms of type of traffic and prioritisation (should they want to have another configuration).

This consumer-empowering approach to net neutrality should be possible also for zero-rating practices when the end-users select the applications or contents for which

⁸⁴ J. Kramer-M. Peitz, *A fresh look at zero-rating*, in *Telecommunications Policy*, 42(7), 2018, 501 ss.

⁸⁵ Art. 2(14) EECC defines end-users, as those natural or legal persons using or requesting publicly available electronic communications services, thus comprising also businesses, yet only those not providing in turn public electronic communications networks or publicly available electronic communications services.

⁸⁶ Equipment that directly or indirectly connect to the interface of a public network. This interface, the Network Termination Point (NTP), is defined as the physical point at which a subscriber is provided with access to a public communications network. The location of the NTP has an impact on whether the router and modem are part of the IAPs' network or end-users can use their own equipment to access the Internet. In this regard, abovementioned BEREC guidelines have dealt with this issue, and more specifically also BEREC, *Report on the Location of the Network Termination Point* and BEREC, *Guidelines on Common Approaches to the Identification of the Network Termination Point in different Network Topologies*.

data usage is not subtracted from his data allowance. This selection should be transparent and non-discriminatory meaning that all contents and applications could be potentially chosen by end-users for the “premium” treatment. If access to zero-rated partner programmes is non-discriminatory and entails low barriers to entry, a sound theory of harm for content providers will usually not be given.⁸⁷

Finally, it is important to stress again that, in this consumer-empowering vision for NN, likewise for the general consumer empowerment, the transparency provisions are of paramount importance, yet a unified approach with consumer empowerment rules in the EECC should be necessarily carried out.

5. Conclusion

Net neutrality rules are a very peculiar type of regulation promoting end-users’ interest in the electronic communications industry and this paper aimed at building a case for a rethinking of the existing rules in Europe. This consideration is based onto a few reasons.

First, as a general point, demand-side pro-consumer policies should be designed and implemented also considering efficiency objectives and their competitive impact. On this basis, it seems appropriate to have a re-thinking of the net neutrality rules, as the original approach embraced by the EU open internet regulation was based solely on a legalistic consumer protection rationale, which could prove to be inefficient, creating disadvantages for consumers, too.

This is even more relevant in a context of increasing interdependences between the electronic communication service and network providers and the other actors active in what could be considered an extended digital network and services value chain. Here it is a second motivation for re-thinking the current rules: while an increasing digital legislation has reconsider the role and interplay of the different actors in the digital ecosystem, i.e., between very large CAPs and end-users, on one side, and business-users, on the other side, it would be completely ideological not to re-assess the rules concerning the main relationships between Internet service providers (ISPs) and content and application providers (CAPs).

Finally, another broad yet crucial aspect should be considered: within the current EU digital industrial policy, ambitious connectivity targets (supply of electronic communications high-speed networks) have been developed by the EU policy maker.⁸⁸ Those

⁸⁷ J. Kramer-M. Peitz, *A fresh look at zero-rating*, cit.

⁸⁸ With emergence of new technologies, the EU public policy for the electronic communications markets began to gradually focus on industrial policy issues, such as the extensive development of future-proof technological assets. The EU progressively designed industrial policies for new investments, by setting connectivity and ultra-broadband targets. At the European level, these industrial policies have been raised from the goals established within the 2010 Digital Agenda for Europe (DAE) to the ambitious objectives within the 2016 Gigabit Society (GS). In the 2016 GS, the Commission set out the following connectivity objectives for 2025: (a) all Union households, rural or urban, should have an internet connectivity with a download speed of at least 100 Mbps, upgradable to 1 Gbps; (b) socio-economic drivers, such as digitally intensive enterprises, schools, hospitals and public administration should benefit from a download speed of at least 1 Gbps and an upload speed of at least 1 Gbps; and

targets and the consequent public funding devoted to augmenting private companies' investment capacity assume that «there is a link between the increased deployment of fixed and mobile broadband and economic development ... higher speeds and new generations of mobile networks have a positive impact on GDP».⁸⁹ Therefore, the current EU industrial policy assumes that there are positive externalities across the digital ecosystem correlated with the deployment and provision of very high-capacity (VHC) telecom networks.⁹⁰

In economic terms, positive externalities imply indirect benefits to individuals/companies for which the externalities' producers are not compensated because those benefits are external to the market(s) where that producers operate. In other words, private benefits (for the actors in the market considered) are lower than social benefits (outside that market) and therefore there is an under-provision of that service/goods. To realign social and private benefits, in order to enhance social welfare, the activity producing positive externalities should be incentivised and increased, by internalising those positive externalities.

In this context, the notorious discussion on “fair contribution” stands, dealing with how to transfer some monetisation from content to networks in order to efficiently internalise positive externalities that telcos are producing in an extended ecosystem and are exploited by large digital platforms. «So that all market actors benefiting from the digital transformation assume their social responsibilities and make a fair and proportionate contribution to the costs of public goods, services and infrastructures, for the benefit of all people living in the EU».⁹¹

Without entering in this very complex and controversial issue, it can be highlighted that, on one side, complementarity between internet access services and content weakens a pure “free riding” argument linked to a positive externalities' environment, as positive externalities are somehow reciprocal due to the positive impact on demand of internet access services that digital contents (especially must-have contents) exert. On the other side, however, IAS subscriptions and digital contents may not be perfect complements at all.⁹²

(c) all urban areas and major transport paths should have uninterrupted 5G coverage

⁸⁹ EU Commission, White paper, cit.

⁹⁰ Quite a few empirical analyses recognise a positive causal effect of the deployment of telecommunications networks and services on GDP growth. See, for example, L.H. Roller-L. Waverman, *Telecommunications Infrastructure and Economic Development: A Simultaneous Approach*, in *American Economic Review*, 91(4), 2001, 909 ss.; and N. Czernich- O. Falck- T. Kretschmer-L. Woessmann, *Broadband Infrastructure and Economic Growth*, in *The Economic Journal*, 121, 2011, No. 552, 505 ss. In addition, recent studies, specific to fibre investments in Italy, have shown that the use of ultra-fast connections has positive effects on both the productivity of firms and on market dynamics, favouring the entry of new firms in sectors with greater use of digital technologies. See C. Cambini-E. Grinza-L. Sabatino, *Ultra-fast broadband access and productivity: Evidence from Italian firms*, in *International Journal of Industrial Organization*, 86, 2023 and C. Cambini-L. Sabatino, *Digital highways and firm turnover*, in *Journal of Economics and Management Strategy*, 2023, 1 ss.

⁹¹ European Declaration on Digital Rights and Principles for the Digital Decade

⁹² This is mainly because, even if demand of connectivity is substantially driven by content consumption, the decision for end-users to subscribe to an ISP (i) may come also from a few different reasons (e.g., interpersonal communications); and (ii) is a preliminary (autonomous) choice in a two-step approach (whereas for typical complementary products users decide, at the same time, how much to buy in

In any case, in economic theory, positive externalities could be tackled ‘à la Pignon’, i.e., by providing contributions aimed at internalising those externalities and re-align social and private benefits. However, those externalities can also be tackled ‘à la Coase’, i.e., by reducing transaction costs and letting the parties to freely negotiate within the ecosystem.

As described, net neutrality rules, given the current market conditions, create insurmountable transaction costs within the ecosystem by qualifying many possible transactions between telcos and CAPs as illicit, thus making it very difficult to use Coasian market-based solutions. Indeed, exactly an inflexibility in the net neutrality approach is at the very base of the endless controversy on “fair-contribution”. On the contrary, as proposed, a substantial softening of the transactional constraints imposed by net neutrality rules may allow using market mechanisms to address externalities and therefore possibly tackling under-provision of (network) services.

function of both products prices); and therefore (iii) the consumption of contents can be variable within a constant demand for connectivity. Therefore, in case of a price increase for contents there will be less consumption of contents and not necessarily also a decline in the IAS demand. Symmetrically, when a decrease in contents price takes place, this will not be necessarily followed by an increase in connectivity demand yet rather an increase in content demand.