Open Market or Free Market? A Comparative Analysis of Economic and Rights-Based Perspectives on Network Neutrality Regulation

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Research Thesis 76040, Spring Semester 2020

Word Count: 10,976

Submitted in fulfilment of the requirements for 76040 Research Thesis, Spring Semester 2020, at the University of Technology Sydney.

CONTENTS

ABSTRACT

Despite over two decades of debate, network neutrality, the principle that all data packets should be treated equally by network access providers, is still an extremely contentious concept. The literature reveals that regulatory and academic opinion varies greatly depending on whether a rights-based or economic perspective is adopted. Historically, economic theory has justified institutional neutrality protections with the intended outcome being increased innovation, investment and maximising consumer choice. However, a growing body of rights-based literature indicates that if the internet is truly a public good to which access is a right, neutrality should be enshrined as a fundamental principle of internet regulation. This article conducts a comparative analysis of these perspectives and current approaches to neutrality regulation in order to ascertain the most appropriate framework for network neutrality. Ultimately, it proposes a more nuanced, conduct-specific regulatory framework which aims to achieve objectives of both rights-based and economic theory.

I INTRODUCTION

In 2006 Sir Tim Berners-Lee made a poignant comment regarding the relationship between neutrality and innovation in the digital era: 'When I created the Web, I didn't have to ask anyone's permission'.[1] Since then the concept of open, permission-less internet architecture has been legislated, repealed and legislated again under the guise of 'network neutrality.' A term coined in 2003 by legal scholar Tim Wu, 'network' or 'net' neutrality broadly refers to the principle that data packets should be transmitted by network providers across the internet in a non-discriminatory manner.[2] Network neutrality is alleged to protect innovation, free expression and competition by preserving the end-to-end principle of the internet.[3] However, a decade of mixed-regulatory approaches has led academics to ask whether neutrality was a solution to a non-existent problem.[4]

Economic evidence tends to indicate that neutrality protections, although historically important, are now economically inefficient.[5] Due to the vast changes in where power is situated within the internet's supply chain, neutrality obligations may assist in entrenching existing monopolies at the application and content layer. However, a growing body of literature advocates for internet regulation that focuses on individual rights protection in cyberspace.[6] These theorists contend that open access and non-discrimination is fundamental to ensuring that freedom of expression and the right to internet access are embedded as core values of the internet's architecture. The schism in neutrality theory is attributable to fundamentally different perspectives on the purpose of neutrality

[1] Jack Schofield, 'Tim Berners-Lee Blogs on Net Neutrality: This Is Serious', *The Guardian* (online, 22 June 2006) <https://www.theguardian.com/technology/blog/2006/jun/22/timbernerslee1>; Andrew Murray, *Information Technology Law* (Oxford University Press, 4th ed, 2019) 44.
[2] Tim Wu, 'Network Neutrality, Broadband Discrimination' (2003) 2 *Journal on Telecommunications & High Technology Law* 141, 141–142.
[3] See Ibid 141; Sarah DeAgostino, 'Neutrality in the Modern World: Internet Regulation's Impact on Economics and Society' (2020) 10(1) *Notre Dame Journal of International And Comparative Law* 97; Arturo J Carrillo, 'Are There Universal Standards for Network Neutrality?' (2019) 80(4) *University of Pittsburgh Law Review*; Murray (n 1).
[4] Ingo Vogelsang, 'Net Neutrality Regulation: Much Ado about Nothing?' (2018) 17(3) *Review of Network Economics* 225, 225–226.
[5] Ibid 240–241.
[6] See generally Lucie C Audibert and Andrew D Murray, 'A Principled Approach To Network Neutrality' (2016) 13(2) *SCRIPTed* 118 <https://script-ed.org/?p=3149>; Carrillo (n 3); Dawn Nunziato, *Net Neutrality, Free Speech, and Democracy in the Internet Age* (Stanford University Press, 1st ed, 2008).

regulations, proponents see it as a bastion of equality and access while opponents view it as a mechanism to safeguard innovation and competition.

These perspectives have resulted in a mixed regulatory response with some countries, namely the United States ('US'), deciding to repeal protections in favour of antitrust regulation, while others, namely the European Union ('EU'), strengthening obligations and enshrining neutrality concepts in human rights instruments. This paper will conduct an in-depth comparative analysis of rights-based and economic perspectives on network neutrality, including a review of the effectiveness of current neutrality regimes in the US and EU. These jurisdictions have been chosen due to their wealth of academic literature and distinctly different regulatory approaches. Due to word constraints, this article will not consider whether non-neutral conduct violates existing principles of international law and is confined primarily to an analysis of discriminatory conduct rather than vertical and horizontal integration. Furthermore, the expansion of neutrality principles to higher layers of the internet, such as to platforms and search engines, is out of scope.[7] This article will demonstrate that neutrality is an extremely nuanced issue that must account for both rights-based and economic perspectives. Neutrality regulation should assess the gravity of the conduct concerned and seek to adopt a broad principles-based approach to ensure its adaptability to technological developments.

Firstly, this paper will provide an overview of the concept of network neutrality and the internet's architecture to ensure subsequent analysis is not devoid of technical understanding. Parts III and IV will, respectively, analyse arguments for a rights-based interventionalist approach and an economics-centred, light-touch regime. Part V will consider the effectiveness of the application of both frameworks in the US and EU. Part VI will propose a new approach capable of achieving the objectives of both frameworks. Part VII will conclude that a mixed rights-based and economics lens must be adopted to provide much needed nuance to existing regulations.

[7] See generally Pinar Akman, 'The Theory of Abuse in Google Search: A Positive and Normative Assessment Under EU Competition Law' [2016] *SSRN Electronic Journal*.

II NETWORK NEUTRALITY & RELATED CONCEPTS

Network neutrality refers to the principle that network providers should be unable to discriminate against data packets on the basis of content, source and/or destination.[8] This paper will refer to network providers as Internet Service Providers ('ISPs'). The term ISP is limited only to services providing last-mile infrastructure to deliver telecommunication services to end-users.

The principle aims to protect against vertical integration and the preferencing of data packets which unfairly favours or disadvantages Content and Application Providers ('CAP' or 'edge provider').[9] This is achieved by protecting two fundamental design elements of the internet's architecture: (1) open-access network ('OAN') and (2) the end-to-end principle.[10] The former describes the internet's horizontally layered network in which the provision of access is kept physically separate from the provision of services over the network.[11] The TCP/IP model utilised by the internet is separated into four layers:[12]

(1) Layer 1. Network access layer;

(2) Layer 2. Internet layer;

(3) Layer 3. Transport layer; and

(4) Layer 4. Application layer.[13]

Therefore, per OAN, ISPs at layer 1 are prohibited from bundling their services with CAPs at layer 4.

The end-to-end principle ensures that control over features, restrictions or services reside in the communication end nodes of the network and not with ISPs.[14] This ensures that network functionality is *only* implemented at higher layers, thus keeping functionality at the 'end' of the system. Resultantly, the network is commonly referred to as a 'dumb pipe' carrying smart content.[15] The end-to-end principle presumes that an application provider is best placed to understand the

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[8] Murray (n 1) 36.
[9] Wu (n 2) 154.
[10] Ibid 142–145.
[11] Balazs Bartoki-Gonczy and Borbala Domotorfy, 'Net Neutrality and Competition Law: New Business Models and Changing Regulatory Approach in the European Union' 11 *US-China Law Review* 416, 426–427.
[12] This is a simplified version of the generic Open Systems Interconnection Reference Model of computing architecture.
[13] Scott Jordan, 'A Layered Network Approach to Net Neutrality' (2007) 1 *International Journal of Communication* 427, 433.
[14] Audibert and Murray (n 6) 119; Wu (n 2) 146.
[15] Lawrence Lessig, 'The Architecture of Innovation' (2002) 51 *Duke Law Journal* 1783, 1789.

requirements of their application.[16] Limitations imposed at the network level would create a biased environment, restraining the growth of specific services. For example, in 2009 at the advent of Voice over IP (VoIP), Deutsche Telekom AG threatened to disallow Skype to run on their iPhone mobile broadband network as it directly competed with its own telecommunications business.[17]

It is important to acknowledge that absolute enforcement of the end-to-end principle creates an inherent bias against latency-sensitive applications. This is evidenced by the Internet Protocol ('IP') which adopts a 'best efforts' approach to data transmission meaning that it does not offer any quality of service ('QoS') guarantees.[18] Packets of data are delivered as fast as possible along a network without regard to the type of data concerned. This implicitly favours applications that are not latency-sensitive as their QoS will not be impacted by lengthier delays in the event of network congestion.[19] For example, a delay of three seconds would go unnoticed when sending an email, but be intolerable when making a VoIP phone call.[20] Therefore, a strict end-to-end design impedes the development of latency-sensitive applications. To counteract this, neutrality frameworks often provide 'reasonable network management' exceptions allowing ISPs to manage internet traffic on an application-neutral basis.[21]

Historically, the internet has been premised on a strict application of these principles, primarily as technology such as deep-packet inspection (DPI) was still in its infancy and did not allow for efficient content inspection.[22] This nurtured innovation in cyberspace as all CAPs had access to the same infrastructure and could provide services without fear of discrimination.[23] Hence, this architecture ensured that Tim Berners-Lee did not 'have to ask for permission' to invent the World Wide Web. An understanding of the internet's architecture is fundamental

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[16] Wu (n 2) 146.
[17] Patrick Van Eecke and Maarten Truyens, *EU Study on the Legal Analysis of a Single Market for the Information Society: New Rules for a New Age? Chapter 9: Net Neutrality* (European Union Study No 9, European Commission's Information Society and Media Directorate-General, November 2009) 2.
[18] Bartoki-Gonczy and Domotorfy (n 11) 424.
[19] Wu (n 2) 148.
[20] Murray (n 1) 37–38.
[21] *Protecting and Promoting the Open Internet*, 47 CFR § 8.2 (13 April 2015) ('*2015 Order*'); *Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union* [2015] OJ L 310/1 ('*Regulation (EU) 2015/2120*') Art 3(3); Wu (n 2) 149.
[22] Wu (n 2) 147.
[23] Ibid.

in determining where power sits within the structure. Previously, internet access was wholly controlled by ISPs, however, the rise of technology giants, such as Google and Facebook, has resulted in a concentration of power at the application layer.[24] Although CAPs are unable to preclude access to the same extent as ISPs, applications are now fundamental in the provision, access and distribution of online content. This shift necessitates a reconsideration of neutrality protections. As the FCC noted ISPs no longer have sufficient bargaining power to force large CAPs into unfavourable positions with the net worth of Google eclipsing the entire US telecommunications industry.[25]

III RIGHTS-BASED PERSPECTIVES

On 5 July 2016, the UN Human Rights Council affirmed in a non-binding resolution that '…the same rights that exist offline must be protected online'.[26] The resolution condemned the prevention or disruption of the ability to seek, receive or impart information online and called upon States to ensure domestic protection of expression in the digital environment.[27]

Network neutrality concerns the ability to freely engage in the internet by safeguarding an individual's ability to disseminate and consume content without restriction.[28] Consequently, neutrality has been construed as a core component of digital human rights protection as it safeguards freedom of expression and internet access.[29] This objective is evident in prohibitions on the blocking of content, however, academics further contend that the promotion and degradation of content equally interfere with rights protection by impeding end-user's freedom of choice.[30] To properly understand rights-based theory, an overview of Cyberpaternalism is required.

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[24] *Restoring Internet Freedom Declaratory Ruling, Report and Order*, 83 Fed Reg 7852, 7877 (22 February 2018) ('*Restoring Internet Freedom Ruling, Report and Order*').
[25] Ibid.
[26] Human Rights Council, *The promotion, protection and enjoyment of human rights on the Internet*, UN Doc A/HRC/RES/38/7 (5 July 2016) [1].
[27] Ibid [13].
[28] Audibert and Murray (n 6) 137.
[29] Audibert and Murray (n 6). See also Carrillo (n 3) 795; JoAnne Holman and Michael McGregor, 'The Internet as Commons: The Issue of Access' (2005) 10(3) *Communication Law & Policy* 267; Tommaso Edoardo Frosini, 'Access to Internet as a Fundamental Right' (2013) 5(2) *Italian Journal of Public Law* 226.
[30] Audibert and Murray (n 6) 138–139. See also *Telenor Magyarorszag Zrt v Nemzeti Media-es Hirkozlesi Hatosaf Elnoke* C-807/18 and C-39/19 [2020] ECLI 708 ('*Telenor Magyarorszag Zrt*').

A *Code is law*

'Code is law' rhetoric is derived from Cyperpaternalist Lawrence Lessig.[31] Cyberpaternalism is a prominent school of thought that advocates for the development of internet-specific internet rules and regulations.[32] Under Lessig's theory, the internet's architecture ('code') sits alongside the law, market and norms as a modality of regulation.[33] Lessig contends that cyberspace regulation is most effective when aimed at manipulating architecture.[34]

To articulate this, Lessig uses the example of obscene content.[35] Historically, legal prohibitions are insufficient to deter consumption of obscene materials and a clear market for consumption exists. Social norms may provide a deterrent through public shaming; however, the internet is a bastion of anonymity. The only remaining method of regulation is to physically prevent its distribution and consumption by manipulating the internet's code.[36] In the UK, ISPs are provided with a blacklist of websites that are then blocked from viewing by end-users.[37] Thus, the internet's architecture acts similarly to airport border control, preventing the importation of illegal articles. This reinforces other modalities of regulation in the same manner that no smoking signs increase the social stigma of smoking.

It is through this framework that Andrew Murray and Lucie Audibert conceptualise neutrality as an enforcer of human rights.[38] Neutrality laws promote access, dissemination and consumption of information and services.[39] By protecting the OAN principle and end-to-end design of the network, neutrality embeds the protection of freedom of expression and access in the internet's physical architecture.

B *Applicability*

The strongest argument for adopting a rights-based framework stems from the right to freedom of expression.[40] The blocking of content, when conducted by State

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[31] Lawrence Lessig, *Code: Version 2* (Basic Books, 2nd ed, 2006) 1.
[32] Murray (n 1) 60.
[33] Lessig (n 31) 38.
[34] Ibid.
[35] Ibid 36.
[36] Ibid 36–37.
[37] Murray (n 1) 63.
[38] Audibert and Murray (n 6) 132.
[39] Ibid.
[40] *International Covenant on Civil and Political Rights*, opened for signature 16 December 1966, 999 UNTS 171 (entered into force 23 March 1976) art 13.

actors, is acknowledged to be an egregious action that garners wide condemnation.[41] Therefore, similar outrage should be replicated in the context of decisions made by private enterprises. This regulatory lens requires an acknowledgment that the risk non-neutral conduct poses to rights protection is so great as to necessitate regulation, regardless of any economic analysis. Academics argue that as ISPs are not subject to the same human rights obligations as State actors, neutrality must be protected as a right.[42] This illuminates a fundamental tension in cyberspace regulation: the internet is widely perceived as public domain and yet largely controlled and administered by private actors whose primary goal is to maximise profitability.

Notably, international human rights law recognises that States cannot be passive in the face of rights violations by private actors. This is reflected in paragraph (20) of the 2018 UN Human Rights Council's non-binding resolution which encourages the continued consideration by States on how to promote and protect freedom of expression on the internet.[43] Moreover, the European Court of Human Rights in *Verein gegen Tierfabriken (Vgt) v Switzerland* held liable a state for the decision of a private enterprise that impinged on freedom of expression by blocking the broadcast of a political advertisement.[44] Responsibility was attributed to the State as the broadcaster's conduct was premised on an obligation arising under domestic legislation.[45] This decision is not strictly analogous to non-neutral conduct by ISPs as Swiss law contained a positive obligation to block advertisements, whereas failing to enshrine neutrality would only passively promote content discrimination. Nevertheless, it is an important example of a state's obligations to protect freedom of expression in the context of private actors.

Arguments regarding the freedom of expression framework are bolstered by the express reference to network neutrality in the 2011 *Joint Declaration on*

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[41] Frank La Rue, *Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression* (16 May 2011) UN GAOR, 17th sess, Agenda Item 2, UN Doc A/HRC/17/27 10.
[42] Audibert and Murray (n 6) 134.
[43] Human Rights Council, *Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development*, UNGAOR, 38th sess, Agenda item 3, A/HRC/38/L.10 (2 July 2018) [20].
[44] *Verein gegen Tierfabriken (VgT) v. Switzerland* (European Court of Human Rights, 24699/94, 28 June 2001) [47].
[45] Ibid.

Freedom of Expression and the Internet.[46] The declaration promoted an internet regime that enforces anti-blocking, anti-discrimination and transparency requirements.[47] Internet access was declared to be a prerequisite for the enjoyment of rights to education, association and free elections.[48] Thus, existing doctrine supports the regulation of network neutrality on the grounds of protecting freedom of expression. Indeed, it has been suggested that Australia's lack of neutrality regulation can partially be attributed to the failure to legislatively enshrine such rights.[49]

C *An absolute rights-based framework*

The strength of rights-based arguments is wholly dependent on the conduct in question. Negative discriminatory practices, such as blocking content and intentional degradation of networks, evidently impede on freedom of expression. A clear example of this is Facebook's Free Basics program that provided a basic internet access service to developing countries.[50] Originally, users were prevented from seeking access to content beyond services with existing Facebook partnerships.[51] The company was a gatekeeper of information, making non-transparent determinations as to the range of content users could access.[52] Outrage over this led to Facebook allowing any CAP to provide services via Free Basics as long as they complied with text-only requirements and did not deliver video or image content.[53] Even under the revised requirements, end-users access to content is severely impeded. Given the trend of social media platforms becoming increasingly reliant on image and video services, Facebook prevented direct competitors from distributing content through this service. It would be nearly impossible to conceive a video and image free version of TikTok. The severity of

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[46] Organisation for Security and Co-Operation in Europe, *Joint declaration on freedom of expression and the Internet* (Signed by the UN Special Rapporteur on Freedom of Opinion and Expression, OSCE Representative on Freedom of Media, OAS Special Rapporteur on Freedom of Expression and ACHPR Special Rapporteur on Freedom of Expression and Access to Information on 1 June 2011) [5].
[47] Ibid [3]-[6].
[48] Ibid [6].
[49] Angela Daly, 'Net Neutrality in Australia: The Debate Continues, But No Policy in Sight' in Luca Belli and Primavera De Filippi (ed), *Net Neutrality Compendium: Human Rights, Free Competition and the Future of the Internet* (Springer International Publishing, 1st ed, 2016) 141, 151.
[50] Helani Galpaya, *Zero-Rating in Emerging Economies* (No 47, Global Commission on Internet Governance, February 2017) 1, 8.
[51] Ibid 7.
[52] Ibid 11.
[53] Ibid 7.

these restrictions has been reflected in India's subsequent adoption of the world's strongest neutrality regulations.[54]

However, in the context of positive discriminatory practices, rights-based arguments become more difficult to sustain. These practices include access-tiering (creating fast lanes for specific content) and zero-rating (the exemption of certain content from a user's overall usage limit). Proponents assert that positive discrimination demotes content by creating a 'dirt road' for competitors, thereby effectively funnelling end-users to prioritised applications.[55] These arguments focus on the freedom to receive information and assert that preferencing specific content is a 'pervasive influence on one's freedom to choose the type of material one wishes to consult on the internet.'[56]

Although human rights rhetoric is an attractive angle on which to base regulation, freedom of expression should not be used to wholly limit an ISP's ability to optimise its service offering. As Andrea Rea articulates 'the complete standardisation of internet offerings has very little to do with democracy.'[57] Preferencing certain forms of data does not necessarily interfere with the protection of individual rights. Such arguments unnecessarily limit an ISP's ability to recoup operating costs in a market structure wherein power and profitability is increasingly concentrated at the application layer.[58] The most pertinent question for rights protection is whether the relevant actions interfere with the ability to access and disseminate information. Except to the extent that network degradation renders access practically impossible, it is a stretch to assert that an ISP must not engage in any form of discriminatory conduct under the guise of neutrality. Arguments regarding the dangers of content preferencing must contend with the fact that the digital marketplace is almost entirely reliant on algorithms that do just that: Google promotes search results, Instagram prioritises images, and Netflix knows what users want to consume before they do. Restraining an ISP's ability to engage in similar conduct via positive discrimination imposes

[54] India's laws
[55] See Revati Prasad, 'Ascendant India, Digital India: How Net Neutrality Advocates Defeated Facebook's Free Basics' (2018) 40(3) *Media, Culture & Society* 415.
[56] Audibert and Murray (n 6) 136–137.
[57] Andrea Renda, *Antitrust, Regulation and the Neutrality Trap: A Plea for a Smart, Evidence-Based Internet Policy* (Special Report No 104, Centre for European Policy Studies, April 2015) 8.
[58] Ibid 7.

ultimate responsibility for rights protection on one layer of the internet despite the increasing concentration of traffic on select applications.

Moreover, assertions that mechanisms, such as DPI, that enable content discrimination are an imposition on freedom of speech,[59] lack a clear foundation. Contentions that DPI would result in a chilling of free speech if end-users were aware of ISP monitoring fail to address the counterpoint that non-neutral, democratic markets provide. Despite failing to enshrine neutrality, Australia has not reported any chilling effect of DPI's on free speech. Academic descriptions of DPI as analogous to a post office worker opening mail and determining whether to post it,[60] are only apt in explaining the technical operation of DPI. ISP's utilising DPI to block content clearly necessitates human rights protection and privacy protections should be enlivened to protect against an ISP utilising DPI to form digital profiles of users. However, in the context of positive discriminatory practices, to borrow from Rea's counter analogy, the existence of a standard post-office service has never prohibited the operation of an express service.[61] The use of such technologies should be monitored but it is incorrect to argue that the use of DPI to promote data amounts to anything more than the acknowledgment by an algorithm of an express postage stamp.

Therefore, rights-based literature is relevant in the context of negative discrimination, however, it does not justify the adoption of extreme and absolute neutrality protections.

IV ECONOMIC PERSPECTIVES

Economic perspectives on network neutrality perceive the maximisation of investment, innovation and consumer welfare to be the primary regulatory objective.[62] An economic framework borrows from concepts of consumer welfare and consumer harm found in competition and antitrust academia.[63] Thus, whereas a rights-based approach is focused on human rights protection, economic

[59] Audibert and Murray (n 6) 133.
[60] Ibid 135.
[61] Renda (n 57) 9.
[62] Volker Stocker and Guenter Knieps, 'Network Neutrality Through the Lens of Network Economics' (2018) 17(3) *Review of Network Economics* 115, 115–116.
[63] Oles Andriychuk, '(Why) Did EU Net Neutrality Rules Overshoot the Mark: Internet, Disruptive Innovation and EU Competition Law and Policy Essays' (2018) 18 *Yearbook of Antitrust and Regulatory Studies* 227, 229.

perspectives are primarily concerned with price-based goals and safeguarding consumer choice.[64]

Neutrality theory has largely been construed within this economic framework with most neutrality regulations intended to achieve economic aims.[65] Historically, the neutrality measures embedded in the TCP/IP architecture are considered to be what allowed for the growth of applications such as Google, Facebook and Netflix.[66] Under this lens, regulation is justified if it continues to yield similar results of protecting innovation and investment. However, there is a distinct lack of comprehensive, unbiased economic analysis on the impact of network neutrality, resulting in contradictory opinions on whether economic imperatives justify regulation.[67]

Proponents rely on the previous decisions of many ISPs in both the US and EU to block access to VoIP services as a clear indicator that innovation suffers without neutrality.[68] Conversely, the US *Restoring Internet Freedom Ruling, Report and Order* (‘*2018 Order*’) repealed network neutrality protections partially on economic evidence that demonstrated that digital competition has flourished since the advent of the internet without regulatory intervention.[69] Similarly, in the preceding order, the FCC relied on the spike in innovation between the introduction and repeal of 2011 neutrality protections to justify further intervention.[70] Each of these assessments has been criticised for lacking objectivity with the FCC’s own Chief Economist at one point referring to neutrality regulation as an ‘economics free zone.’[71] Thus, difficulties arise in assessing whether the record of innovation and access is sufficient to justify regulatory intervention.

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[64] Bob Zelnick and Eva Zelnick, *The Illusion of Net Neutrality: Political Alarmism, Regulatory Creep and the Real Threat to Internet Freedom* (Hoover Institution Press, 1st ed, 2013) 210.
[65] See generally *2015 Order* (n 21); *Restoring Internet Freedom Ruling, Report and Order* (n 24); *Prohibition of Discriminatory Tarrifs for Data Services Regulations* (India) Telecom Regulatory Authority of India, 2016.
[66] Lessig (n 15) 1789–1790.
[67] Christopher Hooton, ‘Testing the Economics of the Net Neutrality Debate’ (2020) 44(5) *Telecommunications Policy* 101869.
[68] *Preserving the Open Internet*, 76 Fed Reg 59192, 59192 – 59193 (23 September 2011) (‘*Preserving the Open Internet*’); Eecke and Truyens (n 17) 2.
[69] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7852, 7868, 7872.
[70] *Protecting and Promoting the Open Internet*, 80 Fed Reg 19738, 19738 (13 April 2015).
[71] Mark A Jamison, ‘Net Neutrality Policies and Regulation in the United States’ (2018) 17(3) *Review of Network Economics* 151, 159; Tim Brennan, ‘Is the Open Internet Order an “Economics-Free Zone”?’, *Benton Foundation* (30 June 2016) <https://www.benton.org/headlines/open-internet-order-economics-free-zone>.

A *Application*

Academics have alleged that a purely economic framework renders neutrality regulation unnecessary as market forces effectively regulate ISP conduct.[72] As Tim Wu stated, ISPs are incentivised to provide the best service possible for both CAPs and end-users.[73] For CAPs, this means that ISPs have an economic imperative to ensure that their network maximises innovation and use at an application layer. For end-users, any restriction on use of a network inherently lowers its value, incentivising ISPs to provide the most effective service possible.[74]

However, this analysis fails to contend with the historical record of ISPs expressly discriminating against VoIP and P2P services. In 2012 the Body of European Regulators for Electronic Communications ('BEREC') reported that 20% of all fixed-line broadband users and half of all mobile network providers contractually restricted the use of VoIP and peer-to-peer services ('P2P') with most enforcing these restrictions technically.[75] Moreover, the decision of ISPs to provision more downstream bandwidth (used to receive data) than upstream bandwidth (used to send data) inherently discriminates against P2P services and latency-sensitive applications that rely on the dual receiving and sending of data.[76] These services tend to consume large amounts of the available bandwidth resulting in a degradation of the overall network.[77] Resultantly, ISPs justify blocking such content as a method of network management. For example, Comcast provided similar reasoning to explain its decision to limit access to the P2P service BitTorrent.[78] Ultimately, it was the FCC, not the market, that intervened on the basis that targeted discrimination does not constitute reasonable network management.[79]

Economic studies have observed that a discriminatory regime can result in increased innovation and investment at the network layer.[80] Such regimes allow ISPs to provide differentiated services that generate higher profits which are

[72] Stocker and Knieps (n 62) 133; Jamison (n 71) 169.
[73] Wu (n 2) 155.
[74] Ibid.
[75] European Union, Body of European Regulators for Electronic Communications, *A view of traffic management and other practices resulting in restrictions to the Open Internet in Europe*, BoR (12) 30 (29 May 2012) 8.
[76] Bartoki-Gonczy and Domotorfy (n 11) 423.
[77] Ibid.
[78] See *Comcast Corp v Federal Communications Commission*, 600 F 3d 642 (DC Cir 2010).
[79] *Preserving the Open Internet* (n 68) 59198 – 59200 (23 September 2011).
[80] DeAgostino (n 3) 98.

subsequently re-invested in the network.[81] Volker Stocker and Guenter Knieps's analysis determined that in non-neutral, competitive environments ISPs will seek to achieve economically efficient capacity allocation by investing in innovative traffic architecture and differentiation strategies.[82] This leads to optimal network capacity allocation in a manner that recognises differing QoS requirements. This has been referred to as a 'market-driven' form of neutrality as all CAPs receive an optimally efficient service while avoiding the inherent bias of the 'best efforts' approach that fails to recognise the requirements of latency-sensitive services.[83] Ultimately, this can lead to greater innovation by incentivising investment at both the application and network layer. This will be considered further in Part V regarding 5G networks and network neutrality protections.

Allowing ISPs to provide differentiated services can also act as a counterbalance to the current accumulation of power by large CAPs. This is particularly relevant since the shifting market structure has resulted in much of internet innovation occurring across the application layer. As such, large platforms are becoming facilitators of innovation and causing market-entry possibilities to shift to higher layers of the internet's architecture.[84] Moreover, practices such as zero-rating have been found to boost competition for smaller ISP operators.[85] Such strategies are regularly employed within developing countries and have been observed to have an "on-ramp" effect.[86] Studies have found that 50 percent of Facebook's Free Basics users went on to purchase a full data package within 30 days of use.[87] Therefore, an economic perspective illuminates benefits in relation to allowing discriminatory ISP practices and their effect on innovation.

B *Should an absolute economic perspective be adopted?*

The existence of a sufficiently competitive ISP market underpins assertions that market-based self-regulation adequately protects neutrality. The contention is that where a market lacks competitive forces or behaviour results in reduced

[81] Stocker and Knieps (n 62) 134.
[82] Ibid.
[83] Ibid 134–136.
[84] Renda (n 57) 8.
[85] Galpaya (n 50) 9.
[86] Ibid.
[87] Ibid.

competition, competition or antitrust law will intervene to safeguard the interests of CAPs and end-users.[88]

However, this requires that ISPs overcome market power and dominant actor tests to compel the intervention of competition regulators. In a 2009 EU Report, competition protections were canvassed as a potential remedy to ISPs blockage of VoIP applications.[89] Ultimately, it was determined that individual ISP firms were unlikely to suffice market power tests, making competition law an insufficient mechanism to remedy or deter harmful conduct.[90] A purely economic assessment argues that where competition regulators cannot intervene, end-users will force IPSs to course-correct by switching providers in response to any impediment to their service. However, this is undermined by the difficulties end-users face in switching services and fails to recognise that consumers are unlikely to rebel against discriminatory practices that benefit popular applications.[91] The creation of a dirt road for smaller CAPs who are attempting to compete with companies, such as Netflix and Amazon, are unlikely to provide an impetus for a consumer to change networks.

When considering this perspective in conjunction with the rights-based approaches clear ideological conflicts become apparent. A rights-based lens supports the adoption of a more absolutist form of neutrality, albeit with the inclusion of a reasonable network management exception. Conversely, pure economic theory favours a more laissez-faire approach that allows market-forces, not regulators, to promote neutrality only insofar as is necessary to maintain innovation.

V EFFECTIVENESS OF CURRENT NEUTRALITY REGIMES

Ideologically, the absolute application of either perspective results in clear conflicts. However, it cannot, therefore, be concluded that regulations that are primarily focused on the objectives of one framework are inherently unable to address concerns of the other. As both regulatory perspectives yield valid concerns, it must be considered whether regulation founded in one approach has the corollary effect of achieving the periphery objectives of the other. To assess

[88] Zelnick and Zelnick (n 64) 216–218.
[89] Eecke and Truyens (n 17) 18.
[90] Ibid 45–46.
[91] Ibid 8.

this question, this paper conducts a comparative analysis of whether the US economic-based and the EU rights-based frameworks have the flexibility to provide for the dual objectives of individual-rights protection as well as maximising innovation and investment.

A *United States*

The US neutrality debate has been described as a game of regulatory 'whack-a-mole' with three iterations of direct protections having been successively struck down or repealed.[92] US neutrality regimes are influenced by the preceding debate on convergence in the data-processing market regarding telephone infrastructure and computer-services.[93] That debate established a dual-classification system for computer-services, creating a regulatory delineation between infrastructure providers and services who rely on such providers.[94] In the 1990s, the FCC chose to adopt this system to regulate communications technologies by classifying internet services based on whether they are 'Telecommunications Services' or 'Information Services.' [95] The former offers telecommunications services directly to the public, whereas the latter is capable of processing and delivering information to end-users by relying on existing telecommunications infrastructure.[96]

Telecommunications Services are classified as public utilities and subject to Title II Common Carrier regulations.[97] This provides intensive regulatory oversight, extending further than network neutrality obligations. For example, common carriers must adhere to strict privacy requirements that are not imposed outright under neutrality protections.[98] By contrast, Information Services operate within a light-touch regulatory environment and is primarily reliant on ex-post antitrust law. Historically, ISPs were classified as Information Services as they did not provide transparent transmission services to consumers, rather they operate

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[92] Ibid 8.
[93] International Telecommunication Union, 'Competition Policy in Telecommunications: The Case of the United States of America' (2002) 14–15.
[94] *National Cable & Telecommunications Association et al v Brand X Internet Services et al*, 545 US 967, 975 - 979 (2005) ('*Brand X*').
[95] *Communications Act of 1934*, 47 USC § 201 (1935 & Supp 1939) ('*Communications Act of 1934*') as amended by *Telecommunications Act of 1996*, Pub L No 104-104, 110 Stat 56 (1996) ('*Telecommunications Act of 1996*').
[96] *Brand X* (n 94) 977 - 978.
[97] *Communications Act* of 1934 (n 95).
[98] *Telecommunications Act of 1996* (n 95) § 222.

over the internet backbone and other existing infrastructure.[99] This resulted in the application of an economic framework that assumed market forces would enforce neutrality obligations or else the Federal Trade Commission ('FTC') would intervene. However, complaints regarding ISP practices in 2010, forced the FCC to issue broad guiding principles and subsequently, direct regulations.[100] Ultimately these measures were struck down by the D.C. District Court on the basis that the FCC had acted ultra vires since it ostensibly imposed Title II obligations without any corresponding reclassification of IPSs as common carriers.[101]

In response, the FCC issued the 2015 *Protecting and Promoting the Open Internet* order ('*2015 Order*'), a rules-based framework that expressly prohibited discriminatory conduct and reclassified ISPs as a Telecommunications Service.[102] This resulted in ISP's coming within scope of numerous regulations including section 222 of the *Telecommunications Act of 1996* requiring services to protect end-user privacy and section 251 requiring ISPs to interconnect with other ISPs in good faith.[103] However, these protections have been repealed under the current *2018 Order* which retracted all neutrality protections and reclassified ISPs as Information Services.[104] Only transparency requirements were retained with the framework otherwise adopting a stance that market-forces alone is sufficient.

Thus, the current approach does not explicitly prohibit any form of discriminatory conduct, rather it requires that if such conduct occurs, ISPs must be honest with consumers about it. The result is a regime which wholly places the responsibility for network neutrality on transparency requirements. If an ISP conduct begins to cause consumer harm it is assumed that the antitrust framework of the *Sherman Antitrust Act of 1890* and *Clayton Antitrust Act of 1914*[105] will provide a sufficient remedy, in particular, through prohibitions on collusion to restrain trade and the creation or maintenance of monopolies. [106] Under this

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[99] *Brand X* (n 94) 979.
[100] *Preserving the Open Internet*, 47 CFR § 8 (2011).
[101] *Verizon Communications Inc. v Federal Communications Commission*, 740 F 3d 623 (DC Cir 2014); *United States Telecom Association et al v Federal Communications Commission and United States of America*, 825 F 3d 674 (DC Cir 2016).
[102] *2015 Order* (n 21) § 8.
[103] *Telecommunications of 1996* (n 95) § 222, 251.
[104] *Restoring Internet Freedom Ruling, Report and Order* (n 24).
[105] *Sherman Antitrust Act of 1890*, 15 USC § 1 (1890); *Clayton Antitrust Act of 1914*, Pub L No 63-212, 28 Stat 730 (1914).
[106] International Telecommunication Union (n 93) 14.

framework, the FCC has shirked its regulatory responsibility by stating that 'public attention, not-heavy handed Commission regulation, has been most effective in deterring ISP threats to openness.'[107]

1 *Rights-based objectives in the US*

In substantiating its reliance on transparency obligations, the *2018 Order* cites the lack of neutrality breaches since the introduction of such requirements in 2010.[108] It is difficult to see the FCC's logic since transparency obligations have been maintained alongside direct prohibitions on non-neutral conduct. The order also asserts that transparency requirements are effective for all forms of discriminatory practices. This is based on the same fallacy alluded to previously, that consumers would be equally as likely to switch providers due to non-neutral conduct even where associated harms effect only CAPs and overall benefit a consumer's preferred service.

As mentioned above, where the market fails to self-correct in the face of harmful ISP conduct, the FTC will intervene. To allay commentators' fears of the difficulties in pursuing litigation, the FCC advised that transparency requirements will provide the evidentiary basis for antitrust proceedings.[109] Aforementioned concerns regarding EU market dominance tests are not necessarily enlivened in the US as academics have observed that US ISP markets are far less competitive than in the EU. However, concerns still exist over the suitability of US antitrust protections to telecommunications markets. Dennis Weisman in particular has stated that reliance on tests of market share to denote market power does not accurately reflect the realities of the telecommunications market.[110] Namely, they do not account for the fact that firms with a comparably smaller market share have the capacity to service a large portion of the market.[111] The result would be that the FTC may characterise a single firm as dominating the market while ignoring the impact of smaller firms through their ability to serve the majority of consumers.[112]

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[107] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7897.
[108] Ibid.
[109] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7897.
[110] Dennis Weisman, 'A Principled Approach to the Design of Telecommunications Policy' (2010) 6(4) *Journal of Competition Law & Economics* 927, 930–931.
[111] Ibid 944.
[112] Ibid.

Thus, it is unclear whether a combined reactionary antitrust and transparency framework is capable of protecting against consumer harm, let alone rights infringement. This issue was recently debated in arguments brought before the D.C. Circuit Court of Appeals in *Mozilla Corporation v FCC* where petitioners lobbied for the repeal of the *2018 Order* partially on the basis of public safety concerns.[113] To illustrate these concerns, petitioners referred to Verizon's throttling of Californian firefighter departments network connection amid severe fires.[114] The ensuing network degradation ultimately impeded their ability to effectively respond to the emergency. Neither the FCC nor FTC intervened and instead of immediately restoring their connection, Verizon attempted to upsell the department to a more expensive network plan.[115] Relevantly, despite upholding the *2018 Order*, the Court criticised the FCC for failing to undertake any genuine analysis of whether antitrust protections could in practice prevent blocking and throttling by ISPs.[116] As stated previously, these forms of negative discriminatory practices explicitly harm rights-based objectives. Reinforcing the lacklustre protections of US antitrust laws is the formulation of the Colgate rule in *Verizon v Trinko*.[117] This rule states that private enterprises have the right to freely chose who to conduct business with as long as their purpose is not to create or maintain a monopoly.[118] In relation to telephony interconnection, James Speta has found that this rule prevents antitrust from enforcing a market-based open-access framework, indicating that it would likely yield similar results for ISP discriminatory practices.[119]

The difficulties of this framework in catering to individual rights considerations are compounded by US reliance on the consumer welfare standard to conceptualise concepts of harm in antitrust law.[120] Protections are focused on

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[113] *Mozilla Corporation v Federal Communications Commission*, 940 F 3d 1, 59 (DC Cir 2019) ('*Mozilla Corporation*').
[114] Ibid 60.
[115] Ernesto Falcon and Katharine Trendacosta, 'The Unresolved Issue of Verizon Throttling Santa Clara's Fire Department Shows Why ISPs Need Rules | Electronic Frontier Foundation', *Electronic Frontier Foundation* (5 November 2018) <https://www.eff.org/deeplinks/2018/11/unresolved-issue-verizon-throttling-santa-claras-fire-department-shows-why-isps>.
[116] *Mozilla Corporation* (n 112) 59.
[117] *Verizon Communications v Law Offices of Curtis V Trinko, LLP*, 540 US 389 407-416 (2004).
[118] *United States v Colgate & Co*, 250 US 300, 307 (1919).
[119] James Speta, 'Modeling an Antitrust Regulator for Telecoms' in Francois Leveque and Howard Shelanski (ed) *Antitrust and Regulation in the US and EU* (Edward Elgar Publishing Limited, 1st ed, 2009) 101, 107.
[120] *Reiter v Sonotone Corp*, 442 US 330, 343 (1979).

whether consumers in the market have been harmed from a purely economic perspective. Analysis of ISP conduct is centred on price variations and consumer choice rather than rights-based considerations of freedom of expression and access.[121] This reflects the broader failure of US antitrust protections to account for non-economic or priced based implications of non-neutral conduct. The seminal case of *Continental T.V., Inc v GTE Sylvania Inc* is widely regarded as demonstrating that US antitrust law is not the proper forum for remedying political or social concerns.[122] Moreover, Justice Douglas Ginsburg extrajudicially noted that US antitrust law has given economists a 'virtual veto over the pursuit of cases unsupported by a persuasive economic theory of harm'.[123] Interestingly, the FCC did agree with the consensus that negative discriminatory practices are harmful.[124] However, the order dismisses freedom of expression concerns by merely stating that such issues have not eventuated and therefore do not require regulation.[125]

2 *Economic objectives in the US*

In relation to economic objectives of neutrality, it is similarly unclear whether the framework actually promotes market innovation or investment. The extent to which the *2018 Order* analyses matters of innovation is primarily by contrast to investment statistics during the *2015 Order*. Thus, the *2018 Order* is alleged to maximise these objectives as the *2015 Order* allegedly stunted them.[126] However, a 2019 comprehensive independent study on neutrality and investment found that neutrality protections from 2010 onwards had no discernible impact on investment levels in the telecommunications industry.[127] This indicates that assuming the repeal of neutrality protections will cause an influx in investment lacks any sound basis. Furthermore, Weisman has rebuked the ability of US antitrust laws to adequately incentivise innovation as they are not equipped to deal with the highly dynamic nature of the telecommunications market.[128] Instead, antitrust policy tends

[121] Christine Wilson, 'Welfare Standards Underlying Antitrust Enforcement: What You Measure Is What You Get' (Luncheon Keynote Address at the George Mason Law Review 22nd Annual Antitrust Symposium: Antitrust at the Crossroads?, Arlington VA USA, 15 February 2019) 5.
[122] Joshua Wright and Douglas Ginsburg, 'The Goals of Antitrust: Welfare Trumps Choice' (2013) 81 *Fordham Law Review* 2405, 2406.
[123] Douglas Ginsburg, 'Synthetic Competition' in Francois Leveque and Howard Shelanski (ed) *Antitrust and Regulation in the US and EU* (Edward Elgar Publishing Limited, 1st ed, 2009) 1, 7.
[124] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7901.
[125] Ibid.
[126] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7852.
[127] Hooton (n 67).
[128] Weisman (n 110) 937.

to promote 'imitation not innovation.'[129] Substantiating this, Jeffry Eisenach and Ilene Gotts have further noted the inadequacies of antitrust law to respond to dynamic IT markets with regulators historically failing to anticipate future innovation and tending to rely on dynamism to ignore monopoly power based on assumed ephemerality.[130]

However, this does not mean that the *2018 Order* wholly fails to achieve economic objectives. The FCC's review of Paid Prioritisation includes a lengthy discussion on the economic benefits of specific discriminatory practices for ISPs, CAPs and consumers.[131] This is as discrimination allows for ISP's to differentiate their service offering, increasing their ability to maximise the profitability of the privately-owned infrastructure in which they have invested.

Importantly, the order recognises that service differentiation has the potential to encourage new edge providers to enter the digital market, curtailing existing monopolies.[132] Currently, edge-providers such as Google, Amazon, Facebook and Netflix rely on interconnection services, such as Content Delivery Networks ('CDN'), to prioritise their traffic without contravening neutrality protections.[133] CDNs operate by caching data to be used by website visitors in data centres that are located at internet exchange points, this placement reduces the distance between end-users and the network, optimising the speed of delivery.[134] The result is that these services reap the benefits of prioritisation without having to pay an ISP. Contracting out these services or developing an in-house CDN is unaffordable for most small CAPs, resulting in a system that entrenches the priority of large providers over their smaller competitors.[135] Alternatively, by allowing ISPs to engage in paid prioritisation, smaller CAPs would be able to potentially obtain priority service.[136] As the FCC stipulates, this could encourage competition and innovation at the application layer, particularly for latency-

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[129] Ibid.
[130] Jeffrey Eisenach and Ilene Gotts, 'In Search of a Competition Doctrine for Information Technology Markets: Recent Antitrust Developments in the Online Sector' in Fabrizio Sant'Orsola, Rehman Noormohamed and Denis Guimaraes (ed) *Communications and Competition Law: Key Issues in the Telecoms, Media and Technology Sectors* (Kluwer Law International, 1st ed, 2015) 69, 70–73.
[131] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7898.
[132] Ibid 7899.
[133] Vogelsang (n 4) 230.
[134] Cloudflare, 'What Is a CDN? | How Do CDNs Work? | Cloudflare UK', *Cloudflare* <https://www.cloudflare.com/en-gb/learning/cdn/what-is-a-cdn/> ('*What Is a CDN?*').
[135] Vogelsang (n 4) 230.
[136] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7900.

sensitive applications reliant on QoS guarantees.[137] Moreover, positive discriminatory practices allow an ISP to recoup some profit for conduct which already occurs at the CAPs layer. This profit can then be reinvested back into the network infrastructure to improve the efficiency of network practices.[138]

Under this framework, if the FTC were to take any regulatory action then it is argued that they would be required to consider the impact of such conduct on the internet market as a whole ecosystem.[139] Notions of harm would be analysed in the context of resulting benefits, avoiding the issue of neutrality protections in unfairly targeting ISP practices.[140] Thus, it is clear that the frameworks allowance of positive discriminatory tactics has the potential to achieve economic objectives. However, the US framework is currently ineffective at concurrently addressing rights-based objectives.

B *European Union*

The historical background of the EU's framework is much more succinct. Regulators originally assumed that competition in the European ISP market was sufficient to protect neutrality interests.[141] However, in 2009 a study commissioned by the European Commission's Information Society and Media Directorate-General reviewed attempts by ISPs to block VoIP services.[142] Competitive forces were analysed and determined to be ineffective at remedying neutrality concerns.[143] Ultimately, the study recommended that the European Council adopt light-touch regulation in combination with existing initiatives.[144] These findings were confirmed by the aforementioned 2012 BEREC report.[145] Subsequent tripartite negotiations between the European Parliament, Council and Commission resulted in the issuing of the *Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015* ('*EU Regulation*').[146] These regulations remain in force today.

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[137] Ibid.
[138] Ibid 7899.
[139] Ibid 7878.
[140] Ibid.
[141] Audibert and Murray (n 6) 126.
[142] Eecke and Truyens (n 17) 2.
[143] Ibid 45–47.
[144] Ibid 2.
[145] Audibert and Murray (n 6) 129.
[146] *Regulation (EU) 2015/2120* (n 21).

The *EU Regulation* adopted a principles-based approach with BEREC issuing guidelines ('BEREC Guidelines') to assist with implementation.[147] Clear exceptions are provided in relation to reasonable traffic management mechanisms and for specialised services, such as IoT devices.[148] Article 4 of the *EU Regulation* enforces transparency requirements, indicating the drafter's intention that direct regulation is combined with market-based intervention.[149]

1 *Rights-based objectives in the EU*

The EU framework places a particular focus on individual rights with Article 3(1) explicitly providing for the rights of end-users to 'access and distribute information and content, use and provide applications and services' regardless of origin or destination. Subparagraph (3) mandates that ISPs treat all traffic equally and without 'discrimination, restriction or interference and irrespective of the sender and receiver.' This is markedly different from the US framework with the 2017 and 2015 FCC orders focusing entirely on the conduct of ISPs and failing to frame neutrality as a positive right of end-users.

Moreover, the BEREC Guidelines assert that references to the rights of 'end-users' are intended to encompass both individual consumers and CAPs.[150] This avoids the creation of a lopsided regime that protects rights of end-users to access but not rights of CAPs to disseminate services. For example, this would encompass the right for CAPs not to have their data packets unfairly throttled. Thus, the wording of the EU framework incorporates strong rights-based protections. Bolstering this is the explicit references made to human rights objectives. Paragraph 13 notes that blocking has the potential to impede on fundamental rights and freedoms of end-users where it is not 'appropriate, proportionate and necessary within a democratic society.'[151] Article 8 goes further by amending the *Universal Service Directive 2002/22/EC* to mandate that national measures securing the availability of electronic communications must respect fundamental rights and freedoms of end-users.

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[147] European Union, Body of European Regulators for Electronic Communications, *BEREC Guidelines on the Implementation of the Open Internet Regulation*, BoR (20) 112 (11 June 2020) ('*BEREC Guidelines*').
[148] *Regulation (EU) 2015/2120* (n 21) Art 3(3).
[149] *BEREC Guidelines* (n 146) 37.
[150] Ibid 7 – 8.
[151] *Regulation (EU) 2015/2120* (n 21) paras 13.

However, the framework extends further than what is required to achieve rights-based objectives. Prohibitions on the conduct of ISPs apply indiscriminately to all discrimination under Article 3(3). There is no requirement that permissibility of conduct is assessed in light of the extent to which it limits end-user rights under Article 3(1). Thus, positive and negative discrimination is treated equally under the *EU Regulation* without justification. As discussed, rights-based harm occurs only insofar as negative discriminatory practices are permitted. Consequently, positive discrimination may limit the exercise of rights only to the extent that it results in negative discrimination. For example, where an ISP has entered into a paid-prioritisation agreement with an edge-provider, concerns may exist that the ISP is incentivised to create a 'dirt road' by degrading the services of competitors. However, this is dependent on the permissibility of throttling under neutrality prohibitions.

The Court of Justice of the European Union attempted to justify prohibiting positive discrimination in *Telenor Magyarorszag Zrt v Nemzeti Media-es Hirkozlesi Hatosaf Elnoke*.[152] The Court determined that zero-rating agreements are liable to increase internet traffic for zero-rated applications, thereby reducing traffic of competitors.[153] The preliminary ruling found that this undermined the 'essence of customer's rights' under Article 3(1) by influencing consumer choice.[154] Assuming that zero-rating influences user choice to such an extent as to impede on individual rights ignores the fact that numerous factors influence an end-user's decision to engage with a service. Namely, it fails to recognise the realities of the multi-sided internet market.[155] Edge-providers exist within their own competitive market and provide distinct service offerings. Consumer choice is not entirely dependent on underlying network service. Regulators cannot assume that users are choosing between equal services with the only differentiating factor being that one is zero-rated. Even where both CAPs provide similar services, such as Netflix and Stan, a user's decision will include consideration of the range of streaming content provided.

[152] *Telenor Magyarorszag Zrt* (n 30).
[153] Ibid (54).
[154] Ibid (7), (22), (46).
[155] Eisenach and Gotts (n 140) 75–76.

The BEREC Guidelines makes an important distinction that must be considered in relation to zero-rated agreements. It is between agreements that allow for continued use of only zero-rated content once a user has depleted their usage plan and agreements where zero-rated content is available only for so long as their plan is operative.[156] The former situation results in zero-rated content being available while all other access is blocked, whereas the latter blocks zero-rated content alongside other content once the plan's limits have been reached. Thus, the involvement of blocking in the first situation greatly influences consumer decisions as it effectively funnels all content towards zero-rated CAPs. This potentially limits end-user's rights.

2 *Economic objectives in the EU*

Article 3(3) of the Regulation provides that ISP's can differentiate their service offering based on QoS requirements without necessarily breaching neutrality obligations.[157] Under the BEREC Guidelines, as long as an ISP does so in a technologically neutral manner, even if it discriminates against particular forms of data, it may be acceptable.[158] For example, it would be permissible to prioritise all video-based content, however, prioritisation of YouTube only would breach protections. This is the EU frameworks attempt at avoiding neutrality protections impeding on the innovation of latency-sensitive services at the content and application layer.

However, the framework does impede innovation by failing to consider the impact of non-neutral conduct on other layers of the internet in entrenching existing edge-provider monopolies. The definition of 'internet access service' under Article 2 applies only to services that 'provide access to the internet, and thereby connectivity to virtually all endpoints of the internet…'.[159] This focuses the regime on services that provide internet access to end-users as distinct from interconnection services which enable traffic to be exchanged between networks.[160] The result is that CDNs are not caught by the framework except insofar as a CDN forms part of the conduct of an ISP and limits end-users rights under Article

[156] *BEREC Guidelines* (n 146) 13.
[157] Ibid 11.
[158] Ibid.
[159] Henning Schulzrinne, 'Network Neutrality Is About Money, Not Packets' (2018) 22(6) *IEEE Internet Computing* 8, 11–12.
[160] Body of European Regulators for Electronic Communications, 'What Is Covered and Protected by the Regulation', *BEREC* <https://berec.europa.eu/eng/netneutrality/regulation/>.

3(1).[161] Thus, large edge-providers continue to be able to circumvent neutrality provisions by using CDNs to prioritise their services. Under the framework, edge-providers who are unable to resource their own interconnection infrastructure are prevented from entering direct agreements with ISPs to similarly prioritise their service. Notably, this loophole seems to be at odds with the sentiment of the regulations, given that the majority of the BEREC Guidelines heavily promote an 'application-agnostic' stance towards traffic discrimination.[162]

Furthermore, there is genuine concern that the framework will restrict the development of new and more efficient traffic discrimination techniques based on QoS requirements.[163] The reasonable traffic management exception under Article 3(3) explicitly carves out measures that are deployed on the basis of commercial considerations.[164] This may disincentivise ISPs to invest in service differentiation techniques at the network layer since they will likely face difficulties in recouping a commercial benefit from such measures to cover the cost of investment. Further stunting network layer innovation are guidelines that regulations do not have to positively establish that such measures were based on commercial grounds.[165] Rather, if it is established that the measures are not 'based on objectively different technical QoS requirements' it will be presumed that the decisions were made on commercial considerations, thus breaching neutrality requirements.[166] Academics have noted the high lost innovation costs of imposing remedies on the basis of mistakenly assuming that innocuous conduct is harmful within IT markets. Eisenach and Gotts note that such Type II errors inhibit existing investment returns and discourage future innovation.[167]

This is not a theoretical issue, 5G networks and associated technologies and business practices will likely be designed to support specific applications for different industries or verticals.[168] In particular, 5G will rely on network slicing, the development of multiple virtual networks within a single physical network, to offer unique services to different industries depending on individual

[161] Ibid.
[162] *BEREC Guidelines* (n 146) 11 – 12.
[163] Christopher Yoo and Jesse Lambert, *5G and Net Neutrality* (Research Paper No 19–17, Institute for Law and Economics, 2019) 13–14.
[164] Ibid 19 – 21.
[165] *BEREC Guidelines* (n 146) 21-22.
[166] Ibid.
[167] Eisenach and Gotts (n 130) 74.
[168] Yoo and Lambert (n 163) 11.

requirements.[169] Neutrality protections may impede network slicing due to blanket prohibitions on traffic discrimination and the requirement that reasonable network management measures be application-agnostic.[170] This would hinder the deployment and proper use of 5G networks, including inhibiting the growth of any latency-sensitive applications which depend on 5G network optimisation.[171] Christopher Yoo and Jesse Lambert in addressing arguments that 'specialised service' exceptions may be applicable, noted that BEREC Guidelines direct this exception towards services that are 'logically separated from the traffic of the internet access service' and only utilised for specified CAPs.[172] Conversely, network slicing is integrated as part of an ISP's service offering and explicitly designed to be adaptable to changing requirements of a range of CAPs.[173]

As such it is evident that the EU approach fails where the US approach succeeds. The EU framework is clearly grounded in strong rights-based protections, encompassing issues of freedom of expression and access. However, the failure to consider each form of conduct individually results in a regime that has a clear and immediate impact on economic objectives of maximising innovation, investment and competition at all layers of the internet's supply chain.

VI TOWARDS A NEW REGULATORY FRAMEWORK

The current US and EU frameworks are inadequate at catering to the objectives of both rights-based and economic perspectives on network neutrality. This incapacity to achieve the broader aims of neutrality theorists is evidently linked to the failure of legislators to adopt conduct-specific neutrality regulation. As is reflected in the literature on neutrality, current frameworks approach the issue as an amorphous concept with neutrality being a catch-all phrase to describe conduct that is either entirely beneficial or entirely harmful. The application of a 'good or evil' dichotomy has exacerbated the politicisation of the issue, distracting regulators from objectively assessing the desirability of discriminatory practices.[174] The above analysis clearly evidences that both rights-based and economic constructions of network neutrality, to a certain extent, justify both

[169] Ibid.
[170] Ibid 15.
[171] Ibid 29.
[172] Ibid 24–26.
[173] Ibid.
[174] Renda (n 57) 2.

direct regulatory and market-based frameworks. However, what is most apparent is that a conduct-specific regime which delineates between positive and negative forms of discrimination could allow regulators to cater to both regulatory objectives.

Using a combined rights-based and economic framework to assess ISP practices ensures that regulations safeguard against the curtailment of end-user rights while simultaneously allowing investment and innovation to flourish at all layers of the internet. In pursuing such a framework, regulators should assess conduct in light of their ability to cause harm by firstly, impeding end-user rights and secondly, stunting economic objectives. This approach guarantees that conceptions of harm are not unnecessarily limited to the considerations of competition and consumer law. Conversely, it requires express deliberations of any impediment which in practice harms the exercise by end-users of their rights to access, consume and disseminate information. Borrowing from the BEREC Guidelines definition of 'end-user rights', this would involve an evaluation of an edge-providers ability to provide their content and application services to end-users.[175] Moreover, integral to creating a balanced framework is ensuring that this assessment considers ISP conduct in the context of the entirety of the internet ecosystem, allowing for consideration of whether any prohibition creates loopholes for CAPs to engage in discriminatory practices. Resulting market-based regulation would create a form of competition described by Ginsburg as 'synthetic competition'. As per Ginsburg's analysis, this will ensure that neutrality regimes are not 'shaped by the single-minded pursuit of economic efficiency' and allow courts to consider important issues that may lack economic justification.[176]

Pursuant to this paper's analysis, this assessment would ensure that negative discriminatory practices, such as blocking and throttling, are prohibited due to their clear impact on freedom of expression and access. However, it would escape the current regulatory fallacy that assumes positive discrimination is guilty by association. It is evident that in preventing negative discrimination, the potentially harmful effects of positive discrimination are largely negated. ISPs will be prevented from degrading their network under conduct-specific prohibitions,

[175] *BEREC Guidelines* (n 146) 7 – 8.
[176] Renda (n 59) 1–2.

dissipating concerns posed by dirt road theorists. Attempts by ISPs to inadvertently downgrade non-prioritised traffic could be measured against requirements that ISPs provide minimum speed guarantees as part of their transparency obligations. ISPs would be allowed to reap the aforementioned benefits of positive discrimination without impacting end-users or edge-providers access. Thus, positive discriminatory practices will be permissible subject to competition and antitrust restraints. As per the suggestions of the *2018 Order*, transparency requirements will aid in the monitoring of market-based regulation and provide evidence from which regulators can assess future harms.[177] Conversely to the current EU framework, ISPs will be able to implement such measures based on commercial considerations insofar as it does not cause harm. This provides an economic incentive to invest in traffic differentiation mechanisms, increasing network innovation which will ultimately benefit latency-sensitive CAPs. Moreover, this ensures small edge-providers have access to similar service differentiation techniques as their larger competitors currently obtain through CDNs. Since large CAPs account for a majority of internet traffic and often provide high bandwidth intensity services, it will allow ISPs to sufficiently recoup the costs of adopting necessary traffic management configurations.[178]

In light of the dynamic nature of digital markets, it is fundamental that this framework adopts a principles-based regulatory approach to ensure it is adaptable to developing technologies and business models, such as 5G and network slicing.[179] Combining the flexibility of principles-based regulation with a broader conception of harm will ensure that regulations are capable of appropriately addressing future positive discriminatory practices that potentially curtail end-user rights without adopting negative tactics. This approach carefully considers Lucie Audibert and Andrew Murray's proposed rights-based neutrality principles with Bob Zelnick and Eva Zelnick's concerns regarding the impact of overregulation on cyberspace

[177] *Restoring Internet Freedom Ruling, Report and Order* (n 24) 7897.
[178] Sandvine, *The Global Internet Phenomena Report* (Annual Report, Sandvine, September 2019) 6–7 <https://www.sandvine.com/hubfs/Sandvine_Redesign_2019/Downloads/Internet%20Phenomena/Internet%20Phenomena%20Report%20Q32019%2020190910.pdf>; Bartoki-Gonczy and Domotorfy (n 11) 423.
[179]=]*See* Audibert and Murray (n 6); Weisman (n 110).

competition.[180] Thus, ensuring consistency with international human rights obligations and economic objectives.

This framework returns network neutrality to the principles first proposed by Tim Wu in coining the term, that ISPs should be allowed to use internet connections 'in ways which are privately beneficial without being publicly detrimental'.[181] However, it will not import Wu's suggestion that service differentiation must be technologically neutral as it recognises that market conditions have fundamentally changed since neutrality was first formulated. In 2003, ISPs exerted significant market power over edge-providers, whereas the rise of companies such as Google, Apple, Amazon, Facebook and Netflix have fundamentally shifted the current market structure. Service differentiation which caters to individual CAPs has the potential to advantage small CAPs and incentivise new market entrants for latency-sensitive services. Therefore, this paper ultimately proposes a return to Tim Wu's conception of neutrality, albeit with allowances for the modern internet.

VII CONCLUSION

Given the reliance of modern society on internet access and connection, it is difficult to deny that a rights-based impetus exists for regulating network neutrality. Equally, economic theorists provide a valuable perspective on the clear dangers of overregulation on the ability of ISP's to recoup operating costs, invest in the network layer and promote innovation at all layers of the internet. These issues have become increasingly apparent as market power continues to shift to higher layers of the internet's architecture.

Despite this, current academia and regulators in the EU and US rely on an overly simplistic depiction of network neutrality. Resultantly, regulators have adopted narrow frameworks that are ill-suited to conducting an objective assessment of any allegedly harmful ISP conduct. Instead, network neutrality has been transformed into a political dogma where proponents have become defenders of individual rights and opponents' protectors of private enterprise. This polarising approach has led to the creation of regulatory frameworks that fixate on achieving the objectives of only one side of the neutrality debate. Thus, rights-

[180] Audibert and Murray (n 6) 132; Zelnick and Zelnick (n 64) 215–221.
[181] Wu (n 2) 149–150.

based frameworks, such as the EU, focus heavily on protecting digital expression and access, while the cornerstone of economics-based regimes, such as the US, is the pursuit of consumer welfare and market efficiency through investment and innovation. This single-minded approach has resulted in regulatory failings on both sides, as is evident in the throttling of Californian firefights network access in the US and the clear tensions between 5G networks and the *EU Regulation*.

In justifying this, regulators tend to assume that the aims of rights-based theorists and economists must be at odds with each other, with the former promoting blanket ex-ante neutrality prohibitions and the latter advocating for ex-post market regulation. This rests on the fallacy that network neutrality protections must either be strictly applied or not applied at all. However, it is evident that rights-based and economic perspectives are equally valid and deserving of regulatory consideration. In analysing the benefits of both perspectives, it is evident that rights-based and economic theories of neutrality are not mutually exclusive. Rather, by implementing a conduct-specific neutrality framework, regulators are able to achieve the objectives of individual rights protection without compromising investment and innovation at network, content and application layers. This assessment reveals that rights-based objectives are best achieved through a direct prohibition on negative discrimination while adopting a market-based approach to positive discrimination safeguards economic aims and avoids the danger of overregulating an extremely dynamic market. Ultimately, the next Tim-Berners Lee would not have to 'ask permission' but will be able to obtain an optimal service from their ISP that meets their application-specific requirements.

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