



BRIEFING PAPER

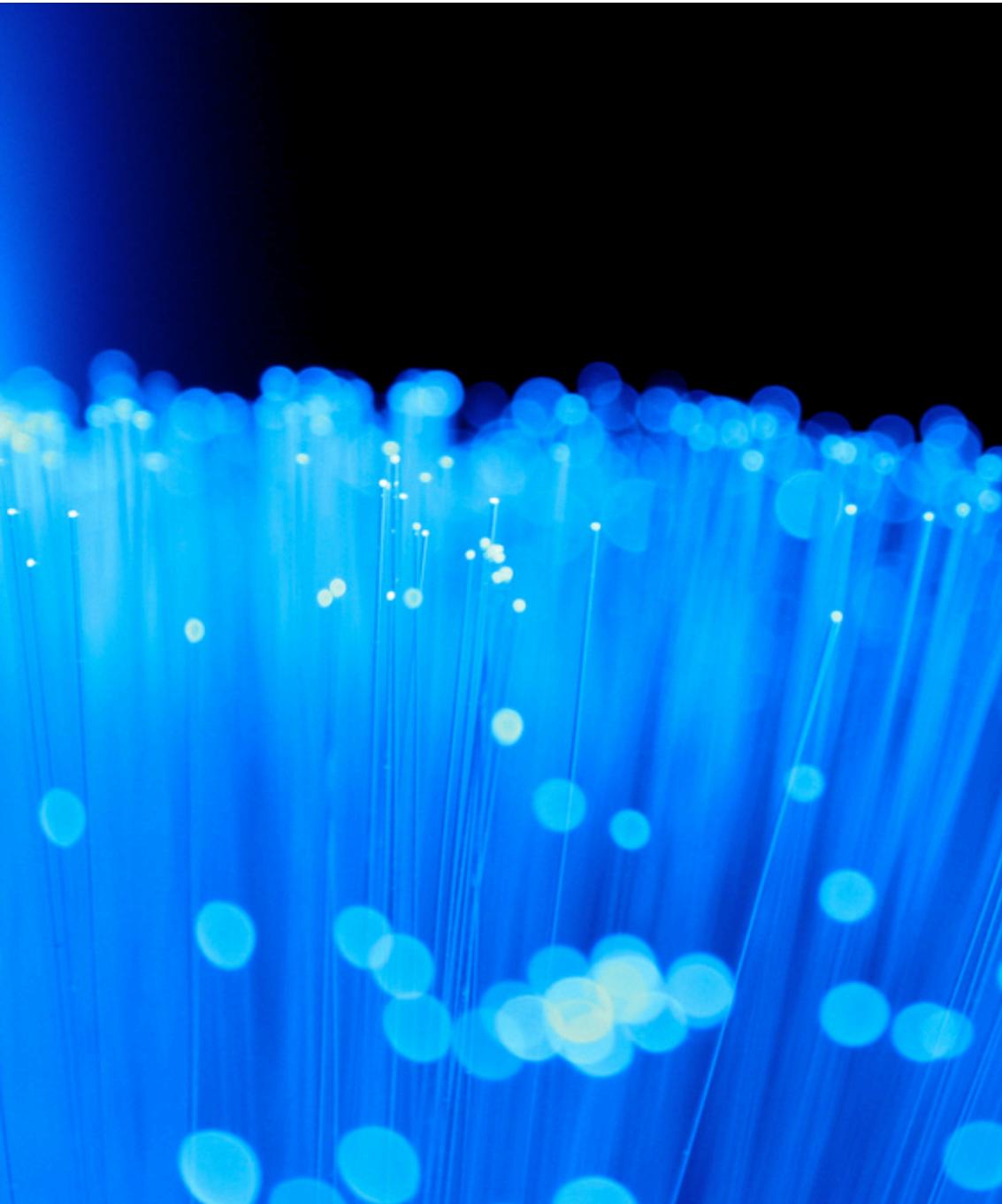
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Regulating the web: The open internet and net neutrality

By David Hirst

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Summary

Net neutrality definition

Net neutrality is the concept that all information and services should have equal and open access online without regard to content, destination or source. Both net neutrality—and the associated concept of the ‘open internet’—are considered to be founding principles of the World Wide Web.

Concerns for fast and slow lanes on the web

In recent years, fears have been growing amongst open rights groups and internet ‘content creators’ (e.g. Amazon, eBay, Netflix) that Internet Service Providers (ISPs) will seek to no longer offer a net neutral service, and instead start charging websites for preferential access arrangements: Thus creating a tiered internet with fast and slow lanes.

Despite being proponents of net neutrality, some large content providers (e.g. Netflix and Google) have already set up arrangements with big ISPs in the US for direct connections where they run dedicated computer servers deep inside the ISPs—known as ‘peering connections’. This allows the ISPs to run these services with a greater bandwidth in preferential arrangement.

ISPs oppose net neutrality regulation

ISPs, meanwhile, oppose net neutrality regulation on two related grounds. First, ISPs argue that by banning big websites from paying providers to pioneer ways of making their service faster, network innovation will freeze, consequently making networks less profitable and thereby removing a reason for investing in network infrastructure. Second, ISPs presently argue that without demand management measures for data hungry services—which net neutrality regulation could prohibit—the delivery of services to everyone would be slowed down.

UK approach to net neutrality

In 2011, Ofcom explained that its approach to net neutrality would continue to rely primarily on there being effective competition amongst ISPs. All of the major ISPs are signatories to the voluntary [Open Internet Code](#), which put forward a set of commitments in support of the open internet: no blocked services; greater transparency; and re-affirmed pledge that unreasonable traffic management practices will not be used to target and degrade the services of a competitor.

Net neutrality in Europe and around the world

The European Commission and Parliament passed a package reforms in March 2014, as part of the *Connected Continent: Building a Telecoms Single Market*, which include certain provisions enshrining net neutrality in EU law. The UK Government is assessing how this will impact upon the industry’s open internet voluntary code.

Chile was the first country to introduce net neutrality regulation, followed a year later by the Netherlands where it is now illegal for mobile telephone operators to block or charge consumers extra for using internet-based communications services. In February 2015, the US telecoms regulator approved a plan to govern the internet like a public utility, thereby enshrining net neutrality into US law.

1. What is net neutrality?

Though there is no single agreed definition of [net neutrality](#), put simply, it is the concept that all information and services should have equal and open access online without regard to content, destination or source.¹ With net neutrality, there are no roadblocks or shortcuts any websites can take to make the end user desire their content more.

This long-held principle—that all traffic on the network should be treated equally—dates back to the web’s origins, and for many enshrines the whole ethos of an open internet; that the full resources of the internet and the means to operate on it are easily accessible to all individuals and companies. For instance, in a guest [blogpost on the European Commission website](#) in February 2015, Sir Tim Berners-Lee, the creator of the World Wide Web, commented that:

When I designed the Web, I deliberately built it as a neutral, creative and collaborative space, building on the openness the Internet offered. My vision was that anyone, anywhere in the world could share knowledge and ideas without needing to buy a license or ask permission from myself or any CEO, government department or committee. This openness unleashed a tidal wave of innovation, and it is still powering new breakthroughs in science, commerce, culture and much more besides.²

Net neutrality is the concept that all information and services should have equal and open access online without regard to content, destination or source.

¹ Network Neutrality: <https://www.ocf.berkeley.edu/~raylin/whatisnetneutrality.htm>

² [Guest blog: Sir Tim Berners-Lee, Founding Director, World Wide Web Foundation](#), 2 February 2015

2. Concerns for a ‘two-tiered’ internet service

2.1 Online fast and slow lanes

Many of the [proponents of net neutrality regulation](#) maintain that, without a neutral stance in what is carried over the network, Internet Service Providers (ISPs) could choose to discriminate and decide how fast data will be transmitted, and at what quality.³

A tiered internet service—with premiums paid for faster access to content—is a concept closely related to net neutrality. The issue came to prominence in 2006, following merger discussions between two American ISPs (AT&T and SBC) who wanted to provide companies with greater financial resources faster connections to their websites.⁴

Net neutrality advocates fear that without regulating for an open internet and net neutrality a two-tiered service with fast and slow lanes could develop.

Associated with these concerns are fears that ISPs could also block or hamper services operated by rival companies.

Box 1: Telecoms companies blocking Skype: EU investigation

In 2012, EU regulators reported on an investigation into traffic management practices by ISPs. This report found that telecoms companies regularly block voice over IP (voIP) and prevent services such as Skype from functioning.

Telecoms companies are allowed to manage network traffic with an *application-agnostic* approach—which would not favour any specific application—however, the EU regulators found that an *application-specific* approach had been more common, and was discriminating against certain services, such as Skype.

2.2 “Fast lane is how the internet is built today”

In an article titled [“What everyone gets wrong about net-neutrality”](#), Craig Labovitz, CEO of DeepField Networks who track how companies build internet infrastructure, explained that “fast lane is how the internet is built today”.⁵ For instance, large content providers, such as Netflix and Google, pay for direct connections to big ISPs, and they run dedicated computer servers deep inside these ISPs—known as “peering connections” and “content delivery servers”.⁶

³ Save the Internet, [“Net neutrality: What you need to know”](#), Accessed online: 15 April 2015

⁴ Marguerite Reardon, [“FCC approves AT&T-BellSouth merger”](#), *cnet.com*, 29 December 2006

⁵ Robert McMillan, [“What everyone gets wrong about net-neutrality”](#), *Wired.com*, 23 June 2014

⁶ Robert McMillan, [“What everyone gets wrong about net-neutrality”](#), *Wired.com*, 23 June 2014

On 20 March 2014, Reed Hastings, Netflix CEO, commented on these arrangements in a post on the Netflix website, explaining that:

Netflix believes strong net neutrality is critical, but in the near term we will in cases pay the toll to the powerful ISPs to protect our consumer experience. When we do so, we don't pay for priority access against competitors, just for interconnection. A few weeks ago, we agreed to pay Comcast and our members are now getting a good experience again. Comcast has been an industry leader in supporting weak net neutrality, and we hope they'll support strong net neutrality as well.⁷

2.3 Hampering innovation

Advocates for net neutrality argue, that without net neutrality, newer online companies would be put at a disadvantage, and this would consequently slow innovation in online services. Savetheinternet.com, a net neutrality advocacy group, maintain that net neutrality supports innovation as it "lowers the barriers of entry for entrepreneurs, startups and small businesses by ensuring the Web is a fair and level playing field".⁸

On 7 June 2006, as the US House of Representatives was due to vote on a bill due to change the way the internet was regulated, Google published a [blogpost](#) setting out their support for net neutrality, in which they highlighted the threat posed to innovation if net neutrality was not upheld:

Google believes that forcing people and companies to get permission from, and pay special fees to, the phone and cable companies to connect with one another online is fundamentally counter to the freedom and innovation that have defined the Internet.⁹

Sir Tim Berners-Lee reiterated many of these points as he set out his argument for explicit net neutrality regulation in a guest [blogpost on the European Commission website](#) in February 2015:

Until now, we've largely got along ok without explicit laws to protect net neutrality, but as the Internet evolves, the situation has changed. If we want to maintain and enhance the Internet as an engine for growth, we must ensure that companies providing access should not be able to block, throttle, or otherwise restrict legal content and services of their users online, be it for commercial or political motivation.¹⁰

⁷ Reed Hastings, "[Internet Tolls And The Case For Strong Net Neutrality](#)" *Netflix—US and Canada Blog*, 20 March 2014

⁸ Savetheinternet.com "[Net Neutrality: What You Need to Know Now](#)", Accessed online: 20 April 2015

⁹ Google official blog, "[The Debate over Net Neutrality](#)", 7 June 2006

¹⁰ [Guest blog: Sir Tim Berners-Lee, Founding Director, World Wide Web Foundation](#), 2 February 2015

3. Opposition to net neutrality regulations

Content creators, such as Google, Amazon and eBay, are largely supportive of net neutrality, while ISPs generally argue against proposals to strongly regulate for it. This has been most pronounced in the US, where proposed changes to the way the internet is classified, have been opposed by ISPs, and other organisations.

ISPs argue that, in an increasingly data-hungry world a tiered internet, is inevitable in order to deliver data-hungry services such as online streaming.¹¹ The industry says that the occasional slowing down of connections is a normal traffic management action aimed at ensuring the smooth functioning of the internet.¹² For example, ISPs say that it may be necessary to charge a movie site a fee to ensure that their 4K ultra-high definition films can be played smoothly on consumers' devices.¹³

Some tech companies have also argued that regulated net neutrality could prove disincentivise investment in the roll-out of broadband infrastructure.^{14,15}

To ensure that networks operate efficiently, ISPs can restrict or ration traffic on their networks, or give priority to some types of traffic over others during peak periods or more generally.

Box 2: Internet.org by Facebook

[Internet.org](#) "is a Facebook-led initiative bringing together technology leaders, non-profits and local communities to connect the two thirds of the world that doesn't have Internet access." Facebook in partnership with seven mobile phone companies (Samsung, Ericsson, MediaTek, Microsoft, Opera Software, Reliance and Qualcomm) are aiming to bring affordable access to selected Internet services to less developed countries by: increasing affordability, increasing efficiency, and facilitating the development of new business models around the provision of Internet access.

The app effectively offers users in developing countries access to a select group of services, like Facebook, news sites, and health information, without paying data charges.

Some commentators, however, [believe the project flouts net neutrality principles](#), as it provides a kind of preferential treatment only offering people in less developed countries access to services through Facebook. Mark Zuckerberg, Facebook's creator and CEO, has rejected both of these claims and has recently opened up internet.org code to developers.

¹¹ Jane Wakefield, "[Net neutrality - should you care about it?](#)" BBC, 14 May 2014

¹² Anon, "[MEPs strengthen Net Neutrality in telecoms overhaul](#)" *EurActiv.com*, 4 April 2014.

¹³ BBC, "[Net neutrality law adopted by European Parliament](#)", 3 April 2014

¹⁴

http://www.tiaonline.org/sites/default/files/pages/Internet_ecosystem_letter_FINAL_1_2.10.14.pdf

¹⁵ Lauren Walker, "[How is Net Neutrality Working for the Countries That Have It?](#)", *Newsweek.com*, 10 September 2014

4. Net neutrality in the UK

In contrast to the US, the UK has a more competitive ISP broadband market, and as a consequence net neutrality has been a less controversial topic. In a 2010 speech on [“The Open Internet”](#), DCMS Minister [Ed Vaizey highlighted](#) that “unlike in the UK, in some parts of the US consumers have no choice which ISP they use because only one offers a service in their area.”¹⁶ In the same speech Ed Vaizey also set out three principles to guide the debate on net neutrality:

- Users should be able to access all legal content;
- There should be no discrimination against content providers on the basis of commercial rivalry;
- Traffic management policies should be clear and transparent.¹⁷

4.1 Ofcom net neutrality statement, 2011

On 24 November 2011, [Ofcom published a statement setting out its approach to net neutrality](#).¹⁸ The executive summary to this statement started by highlighting that “growth in the use of the internet delivers substantial benefits, but may also require new approaches to traffic management”.¹⁹ Ofcom found that “the market has generally been an effective mechanism for delivering [consumer] benefits” and that their approach to traffic management would “continue to rely primarily on there being effective competition amongst Internet Service Providers (ISPs)”.²⁰

Ofcom summarised its approach to net neutrality by stating:

- We recognise the benefits associated with 'best-efforts' internet access and the provision of managed services, and seek for them to co-exist.
- We would be concerned if network operators were to prioritise managed services in a manner that leaves insufficient network capacity for 'best-efforts' access to the open internet. In such circumstances we would consider using the powers which allow us to safeguard 'best-efforts' access to the open internet by imposing a minimum quality of service on all communications providers.
- We regard any blocking of alternative services by providers of internet access as highly undesirable. Where providers of internet access apply traffic management in a discriminatory manner, our view is that this could have a similar impact to outright blocking. Our current view is that

¹⁶ Ed Vaizey, [Oral Statement to Parliament: The open internet](#), Gov.uk, 17 November 2010

¹⁷ Ed Vaizey, [Oral Statement to Parliament: The open internet](#), Gov.uk, 17 November 2010

¹⁸ Ofcom, [Ofcom's approach to net neutrality](#), 24 November 2011

¹⁹ Ofcom, [Ofcom's approach to net neutrality](#), 24 November 2011

²⁰ Ofcom, [Ofcom's approach to net neutrality](#), 24 November 2011

we should be able to rely on the operation of market forces to address the issues of blocking and discrimination, but we will keep this position under review.

- Effective competition requires that sufficient information is available to enable consumers to make good purchasing decisions. This document sets out our current view as to what we believe to be necessary, both in terms of technical information on traffic management practices, and transparency as to services which are blocked or discriminated against.²¹

4.2 Open internet voluntary code of practice

In July 2012, BE, BT, BSkyB, KCOM, giffgaff, O2, Plusnet, TalkTalk, Tesco Mobile and Three signed up to the [Open Internet Code](#), which put forward a set of commitments in support of the open internet.²² The commitments were developed by the signatories following discussions with Government, Ofcom, industry and stakeholders.

Signatories to the code agreed to the three commitments: to provide full and open internet access products with no blocked services; provide greater transparency in instances where certain classes of legal content, applications and services are unavailable on a product; and re-affirms that unreasonable traffic management practices will not be used to target and degrade the services of a competitor.

Box 3: Open internet code of practice

1. Signatories to this code support the concept of the open internet and the general principle that legal content, applications and services, or categories thereof should not be blocked. Whilst products that offer full internet access will be the norm, in order to support product differentiation and consumer choice, ISPs retain the ability to offer alternative types of products. In instances where certain classes of legal content, applications and/or services are unavailable on a product signatories to this code will:
 - (i) Not use the term "internet access" to describe or market such products; and
 - (ii) Ensure that any restrictions are effectively communicated to consumers, building on the commitments made in the transparency code if practice.
2. Signatories to this code realise the positive impact some forms of discrimination could have in supporting innovation and choice and retain the right to develop and offer managed services. In recognising however that some forms of discrimination may be harmful, signatories undertake that traffic management will not be deployed in a manner that targets and degrades the content or application(s) of specific providers. Signatories also recognise the importance of best efforts internet access being a viable choice for consumers alongside any managed services that might be developed and offered.
3. Signatories support the provision of clear and transparent traffic management policies as outlined in the voluntary code of practice for traffic management transparency.²³

²¹ Ofcom, [Ofcom's approach to net neutrality](#), 24 November 2011

²² DCMS, [ISPs launch open internet code of practice](#), Gov.uk, 30 August 2012

²³ [Open Internet Code of Practice](#)

In answer to a [PQ on 1 May 2014](#), Ed Vaizey commented that he thought that the Government was “ahead of the curve” in putting together the open internet voluntary code of conduct, “under which they [ISPs] agreed that they would not block traffic for anti-competitive reasons”.²⁴

On 19 January 2015, [EE, Virgin Media and Vodafone signed up to the open internet code](#), meaning that all the major UK ISPs—operating across both fixed and mobile networks—have now signed up to the code.²⁵

²⁴ [HC Deb 1 May 2014 c983-984](#)

²⁵ Alex Scroxton, [“EE, Virgin Media and Vodafone sign net neutrality pledge”](#), *Computerweekly.com*, 19 January 2015

5. Europe and net neutrality

As part of its Digital Agenda for Europe, the European Commission, with the help of the Body of European Regulators for Electronic Communications (BEREC), has stated that it "is actively committed to preserving the Open Internet and achieving Network Neutrality".²⁶

In December 2012, [BEREC published a paper summarising the findings of its work on net neutrality](#) since 2009. BEREC's conclusions on the issue of net neutrality include the following:

- Competition is expected to discipline operators, and ensure the best offers for consumers, but this critically relies on effective transparency and the ability of end-users to easily switch service providers.
- Both NRAs and end users should be able to monitor the performance of the Internet access service, and of the applications used via that Internet access service.
- Where competition and transparency are inadequate or insufficient to address concerns, existing regulatory tools (including quality of service requirements) should enable NRAs to address net neutrality related concerns for the time being (though not all of these tools have been fully tested yet). NRAs are ready to act without hesitation if necessary.²⁷

The Digital Agenda for Europe forms one of the seven pillars of the [Europe 2020](#) Strategy which sets objectives for the growth of the EU by 2020. The Digital Agenda proposes to better exploit the potential of Information and Communication Technologies (ICTs) in order to foster innovation, economic growth and progress.

5.1 Connected Continent: Building a Telecoms Single Market—Net neutrality provisions

In spring 2013, the European Council requested the Commission to make a proposal for achieving a single market in telecoms. On 11 September 2013, the commission adopted a [legislative package](#) for a "Connected Continent: Building a Telecoms Single Market" including a guarantee of net neutrality, which the Commission described as follows:

- This proposal will end discriminatory blocking and throttling and deliver effective [net neutrality](#). It goes wider than the measures in the US (which does not prevent blocking or throttling of services such as VOIP on mobile).
- It sets out clear rules for traffic management which has to be non-discriminatory, proportionate and transparent.
- Companies would however be allowed to differentiate their offers (for example by speed) and compete on enhanced quality of service. There is nothing unusual about this – postal services (express mail) and airlines (economy/business class) have done this for decades.
- To meet end-users' demand for better service quality, content providers may agree deals with internet providers

²⁶ European Commission, "[Open internet: EU Actions](#)". Accessed online: 1 May 2015

²⁷ BEREC, [Summary of BEREC positions on net neutrality](#), BoR (12) 146, December 2012

to assure a certain quality of service. Such offers will enable telecom operators to generate additional revenue streams from OTT actors, content providers as well as from consumers who are willing to pay for better or faster services. These revenues in turn, will enable operators to finance investments into network upgrades and expansion.

- Specialised services must not lead to quality degradation of the "normal"/best efforts Internet. They are coherent with the way the internet was engineered.²⁸

Some analysts have argued that the caveat allowing "specialised services" to be exempted from the principle, should be regarded as a ["dangerous loophole"](#).^{29, 30}

5.2 European Parliament vote, March 2014

In March 2014, the [European parliament voted on the Commission's regulatory proposals](#)³¹ passing the package of reforms with 30 votes to 12 (with 14 abstentions).³²

Pilar del Castillo, the rapporteur who leads the Parliament's work with the package, commented on the vote in the European Parliament by stating:

"...we have built in further safeguards for internet openness, by ensuring that users can run and provide applications and services of their choice as well as strengthening the internet as a key driver of competitiveness, economic growth, social development and innovation"³³

In contrast, telecoms operators were less enthusiastic, with Luigi Gambardella, Chairman of ETNO, the association of the main telecoms operators in Europe, stating:

"Today's vote risks derailing the original objectives of the Connected Continent Regulation, namely a strong European digital industry igniting growth and jobs creation. If the restrictive changes to the Open Internet provisions are confirmed in the final text, the access of European citizens and businesses to innovative and high-quality services will be negatively affected. This would turn into a dangerous situation, in which the European digital economy will suffer and EU businesses will be put in a difficult

The Commission defines a *specialised service* as "an electronic communications service or any other service that provides the capability to access specific content, applications or services."

²⁸ European Commission, ["Connected Continent legislative package"](#). Accessed online: 1 May 2015

²⁹ Anon, "Net Neutrality: Dangerous Loopholes Remain After Key Vote by Lead EU Parliament Committee" *La Quadrature du Net*, 18 March 2014. Accessed online: 1 May 2015

³⁰ Inge Graef, ["Why not "Go Dutch" and Protect Net Neutrality without Defining Specialised Services?"](#) *LSE Media Policy Project Blog*, 4 April 2014

³¹ European Commission, [Proposal for a regulation](#), 26 March 2014

³² Olivia Solon, ["EU votes to protect net neutrality, end roaming charges"](#), *Wired.com*, (18 March 2014)

³³ Pilar del Catillo as quoted in: Olivia Solon, ["EU votes to protect net neutrality, end roaming charges"](#), *Wired.com*, 18 March 2014

competitive situation with respect to other regions of the world".³⁴

5.3 Coalition Government comment on European regulation

In February 2015, [DCMS Minister Ed Vaizey MP wrote to Sir William Cash](#), in his capacity as Chairman of the European Scrutiny Committee, to provide an update on setting out the Commission's Presidency text covering net neutrality (and roaming) elements of the telecommunications single market. Mr Vaizey explained that he supported the lack of specific details in the regulatory text as it retained flexibility, but was also seeking clarification that the regulation would not negatively impact upon the UK's self-regulatory system:

I believe that the lack of specific definitions of 'net neutrality' and 'specialised services' future-proofs the regulation by providing sufficient flexibility in the text. Although there was a push by some Member States, this has been resisted by the Presidency. This flexibility is supplemented by the principles-based approach that has been adopted and I support.

However, the current text sets out the principle that all traffic should be treated the same, whilst also setting out what constitutes reasonable traffic management, followed a series of instances when exceptional traffic management can take place. Council remains undecided on this point. I am seeking to have the formulation of this text altered in order to make it clear which forms of traffic management are acceptable in order to effectively manage networks - and thus ensure quality of services for users across a variety of services - and which forms of traffic management are not considered to be acceptable and may drive or underlie anticompetitive behaviours.

A further risk arises from attempting to minimise the Regulation's impact on the current self-regulatory system here in the UK. In particular, I am seeking to ensure that the text will allow the continuation of self-regulatory processes for blocking of unlawful material. Progress towards this outcome is well-developed and positive.³⁵

³⁴ Luigi Gambarella as quoted in: Anon, "[MEPs strengthen Net Neutrality in telecoms overhaul](#)" *EurActiv.com*, 4 April 2014

³⁵ [Ed Vaizey MP letter to Sir William Cash, Chairman of the European scrutiny Committee](#), 17 February 2015

6. Net neutrality around the world

Chile

Chile was the first country to introduce legislation enforcing net neutrality, when it included net neutrality provisions to its General Telecommunications Law in 2010.³⁶

The Netherlands

The Netherlands became the second country worldwide—and first in Europe—to introduce net neutrality legislation in June 2011. The national law bans its mobile telephone operators from blocking or charging consumers extra for using internet-based communications services, (e.g. Skype or WhatsApp).³⁷ An article in *Newsweek* highlighted that as a result of the law, Dutch mobile operators raised charges overall to compensate for revenue lost due to the restrictions. But advocates still hail the law as a consumer victory.³⁸

Brazil

On 22 April, 2014, Brazil adopted a new law which establishes that telecom companies cannot change prices based on the amount of content accessed by users.³⁹ The legislation—dubbed Brazil's 'Internet Constitution'—has been hailed by experts, such as Sir Tim Berners-Lee, for balancing the rights and duties of users, governments and corporations while ensuring the Internet continues to be an open and decentralized network.⁴⁰

USA

In February 2015, the US telecoms regulator [US telecommunications regulator approved a plan to govern the internet like a public utility](#), thereby enshrining net neutrality into US law.⁴¹ This decision is being subjected to judicial review.

³⁶ Lauren Walker, "[How is Net Neutrality Working for the Countries That Have It?](#)", *Newsweek.com*, 10 September 2014

³⁷ Associated Press, "[Net neutrality enshrined in Dutch law](#)", *Guardian*, 23 June 2012

³⁸ Lauren Walker, "[How is Net Neutrality Working for the Countries That Have It?](#)", *Newsweek.com*, (10 September 2014)

³⁹ Jane Wakefiel, "[Net neutrality - should you care about it?](#)" *BBC*, 14 May 2014

⁴⁰ Reuters, "[Brazilian Congress Passes Internet Bill of Rights](#)", *NY Times*, 22 April 2014

⁴¹ White House Briefing: [Net Neutrality: President Obama's Plan for a Free and Open Internet](#), 26 February 2015

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