Net neutrality review: Ofcom's call for evidence
Sky's response

Summary

Internet access markets and markets related to services provided over the internet have flourished in the two decades or more since net neutrality regulation was first put in place in the UK. Businesses, consumers and the UK economy have undoubtedly benefited from the phenomenal growth in these sectors.

As a major UK broadband provider and a significant distributor of content and other services over the internet, Sky is well placed to judge whether there is a case for material change to these rules. We consider that the current framework works well and should largely be maintained.

In particular, the rules' aim of safeguarding fair, reasonable and non-discriminatory treatment of traffic in the provision of internet access services helps to support the UK ecosystem that has driven consumer adoption of internet access (and at faster speeds and at largely affordable prices) and the services that are provided over the internet. The rules protect internet users' right to access an open internet freely by requiring ISPs to not influence or restrict access to legal services provided over the internet. Where there is a risk that ISP networks will be congested, the rules are sufficiently flexible to allow the largest internet companies (or their content distribution network partners) to put in place networking solutions with ISPs to decongest ISP networks to the benefit of everyone in the value chain – end users, internet companies large and small and the ISPs themselves.

ISPs can also take reasonable, proportionate steps should there be unforeseen increases in internet traffic that put the ISP network at risk of network congestion. Currently, the most likely sources of large, unexpected increases in traffic are some large gaming and software companies who sporadically release large downloads with little or no warning to ISPs. During the first COVID lockdown when home broadband networks were being used heavily and the risk to the integrity of ISP networks was greater, better collaboration between ISPs and these companies (and their distribution partners) minimised the impact of their releases by providing longer prior notice to ISPs and better timing of releases. It is also evident that the current framework allows ISPs to take further appropriate steps against any sources of unexpected 'bursty' traffic that threaten the integrity of their networks.

We do not support the argument made by some ISPs that the current framework is unfair because it prevents them from charging the internet companies who are responsible for the majority of internet traffic more to use their networks. While in the UK there has been sustained growth in internet traffic and ISPs continue to invest in more network capacity to meet this growth, these costs still represent a relatively small proportion of the overall ISP cost stack for delivering internet access services and subsequently end users' internet access bills (which remain relatively low and affordable for most). Further, the largest internet companies (and their content distribution network, CDN, partners) also bear the costs of implementing

and operating networking solutions with ISPs to cache content closer to end users. These costs are passed onto the end users of the internet companies' services.

As internet traffic continues to grow, there is no reason to believe that the current framework will not continue to support good outcomes for consumers, businesses, ISPs and internet companies. Internet companies and ISPs will continue to have a shared goal of making sure their respective products work well and this has the knock-on beneficial effect of improving the quality of delivery of other, smaller internet services. The risk with affording ISPs more scope to discriminate between sources of internet traffic is that end users' scope to use the internet freely is diminished with ISPs favouring certain internet traffic (including their own services).

While the fastest internet access speeds made possible by FTTP and 5G are not necessary for the internet services that are popular today, the large investments currently being made by ISPs with access networks in these new technologies should also be recoverable without changes in net neutrality rules. In fixed broadband, Ofcom has moved away from cost-based charge controls on Openreach's wholesale local access products expressly to provide Openreach and altnets a fair opportunity to earn a reasonable return on their FTTP investments. In mobile, ISPs continue to charge end users for their data usage. This model enables mobile operators to recover more of any future 5G investment costs from the consumers that use the network most but, even if the market were to move more towards unlimited data packages, mobile network operators would not be prevented from recovering their costs.

On balance, we consider the current net neutrality framework and, in particular, the aim of safeguarding fair, reasonable and non-discriminatory treatment of traffic in the provision of internet access services works well. There is no case for substantive changes.

Internet access and usage in the UK have flourished under the net neutrality framework

While the UK's latest net neutrality rules were established in 2016, previous incarnations supporting the principles of an 'open internet' by setting rules by which ISPs should operate have been in place for more than two decades. These rules are designed to protect "*internet users' right to be free to access and distribute information and content, run applications and services of their choice, and use terminal equipment of their choice.*"[1] The rules are aimed at ISPs because it is recognised that they have the potential to influence or restrict the freedom of choice of end users.

Over this period, there have been transformational and hugely beneficial changes in both the internet access services that consumers buy and the internet services that they use over their internet connections. Fixed and mobile access to the internet has shifted from slow, data-constrained services such as dial-up and 2G to fixed broadband of increasing speeds now up to 1 Gb/s and 4G and emerging 5G mobile services with increasingly generous data packages. Consumer appetite for these services has grown substantially with fixed broadband penetration now standing at 92% of UK households in 2021.[2] Meanwhile, with the first iPhone launching in 2007, smartphone adoption has risen to 88% of adults by 2021.[3]

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1 Page 1, *Net neutrality review: Call for evidence*, Ofcom, 7 September 2021.
2 Figure 1.10, *Online Nation 2021*, Ofcom, 9 June 2021.
3 *Technology Tracker 2021*, Ofcom.

The increasing shift of our private and business lives online with the explosion of innovative new services provided over the internet has undoubtedly been significantly beneficial to the UK economy, businesses and consumers. The whole ecosystem that delivers these services to end users has also flourished.

Broadband and mobile providers (ISPs) have seen widescale adoption of broadband and mobile data services and a strong firming up of demand and willingness to pay for these services. This has underpinned ISPs' investments in their networks to provide greater internet access speeds and capacity. At the same time, innovative firms providing services over the internet have proliferated with the most popular now being at the heart of our online lives and becoming some of the largest companies in the world.

While there has been continual growth in internet traffic generally, in part driven by the massive popularity of a handful of services provided over the internet, end users' internet access services continue to perform well. Ofcom has recognised this in its fifth annual report on monitoring 'open internet access'.[4] There is no evidence that net neutrality rules have impeded the development of the internet access market in the UK, nor markets that deliver content, applications and other services over the internet.

The net neutrality framework supports a balanced ecosystem in the UK

The current net neutrality rules are sufficiently flexible such that generally UK ISPs and large providers of content and other services over the internet (and their partners who operate content distribution networks) work responsibly together to optimise the smooth running of their respective services.

This collaboration often entails sensible planning and forecasting in order to establish any appropriate content distribution networking arrangements so that larger sources of internet traffic are cached closer to end users. This can be at the edge of or within an ISP's core network, the effect of which is to decongest an ISP's general interconnects with the internet and the key circuit routes in its core network. This in turn ensures that all services provided over the internet – large and small – flow freely on the ISP network and the end user's internet access service works well.

End users, ISPs and providers of services over the internet all gain from these arrangements. Net neutrality non-discrimination rules underpin these benefits by ensuring that an ISPs' objectives when dealing with internet companies and their partners are to enable their end users to use the internet freely without interference.

Net neutrality rules already allow ISPs to take steps to maintain the integrity of their networks when there is unforeseen, 'bursty' internet traffic

By and large, ISPs and large internet companies have worked well together to maintain the quality of their services. However, to the extent that the performance of networks is threatened by unforeseen internet traffic (such as the 'bursty' traffic than can be caused by large gaming and software downloads), ISPs can already take steps under the current net neutrality framework to ensure that this traffic does not jeopardise the performance of other services. Ofcom states,

[4] Paragraph 1.7, *Monitoring compliance with the Open Internet Regulation*, 1 November 2021.

> *"They* [ISPs] *should treat all traffic equally when providing internet access services, subject to the following;*
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> - *They are allowed to use 'reasonable' traffic management measures when certain conditions are met, i.e. that these measures are:*
>   - *based on objectively different quality of service requirements, rather than commercial considerations;*
>   - *transparent, non-discriminatory and proportionate; and*
>   - *not maintained for longer than necessary and do not monitor specific content*
> - *They should not engage in any other forms of traffic management (e.g. blocking, throttling, altering, restricting, interfering with, degrading, or discriminating between content, applications, services, or categories of them) apart from in very limited cases;"*[5]

Some of the limited circumstances where other forms traffic management may be appropriate are described by Ofcom.

> *"Exceptions include traffic management to comply with a legal requirement; to preserve network integrity and security; and/or to prevent impending network congestion and manage exceptional or temporary network congestion."*[6]

We consider that these rules allow ISPs to take steps to manage the sources of unforeseen traffic spikes and the subsequent risk to their networks and other internet services (as long as they do this in an objective and fair way). It is not appropriate for these spikes to have a detrimental, knock-on impact on the running of other internet services which are often responsibly forecast and prepared for by large internet companies and their ISP partners.

There could be better collaboration by some of the sources of these traffic spikes (some gaming and software companies and their CDNO partners), particularly with respect to providing ISPs with sufficient advanced warning and better timing of these downloads. This would be more in keeping with the steps taken by other large internet companies and ISPs. We saw some signs of improvement in collaboration during the first COVID lockdown in the UK, prompted when the value chain came together under the auspices of Ofcom to ensure networks and services coped with the large shift to home working and learning (which they did).

We think it is unlikely to be efficient for ISPs to dimension their networks to provide unlimited capacity to cope with the infrequent very high peaks that are created during some of these downloads. We doubt any parties will find this an efficient cost to incur given the additional network capacity would be unused most of the time and consumers would be unlikely to be willing to bear this cost (even if for example cost recovery was targeted at gaming consumers). Therefore, and given these downloads are less time dependent than many other services (for example, streaming) running over the internet, it is appropriate that they can occur within the reasonable capacity available to them and without detrimentally impacting other internet services and broadband and mobile data services overall.

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[5] Paragraph 2.8, *Net neutrality review: Call for evidence*, Ofcom, 7 September 2021.
[6] Footnote 4, *Ibid.*

The current net neutrality framework does not prevent ISPs from taking measures against sources of unforeseen, 'bursty' internet traffic that threaten the running of their networks. In fact, it appears to allow it explicitly.

UK ISPs can recover their network costs

Some ISPs argue that they have invested huge amounts in their networks to meet the growth in internet usage and that net neutrality non-discrimination rules are unfair because they prevent ISPs from charging the largest internet companies, who are responsible for the majority of internet traffic, more to use their networks. For instance, Marc Allera, CEO of BT's Consumer Group said,

> *"When the* [net neutrality] *rules were created 25 years ago I don't think anyone would have envisioned four or five companies would be driving 80% of the traffic on the world's internet. They aren't making a contribution to the services they are being carried on; that doesn't feel right....*
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> *.. The only contribution being made is by consumers through what they pay or by us, the networks, does that feel fair?..There are other business models that would only require some amendments to net neutrality. We are only talking about the biggest players driving the largest consumption of content and data; there needs to be an evolution of the principles."*[7]

These arguments are unclear. ISPs can, and do, recover their network costs from consumers and from internet companies. They are not out of pocket. Nor is it clear why BT considers that 'networks' are bearing costs that might be borne by others.

As acknowledged by Marc Allera, consumers generally pay for these costs in their rental prices for internet access. All ISPs face these network costs as they compete with each other on network capacity, speed and quality. As such, these costs are reflected and recovered in retail prices. The costs of increasing network capacity constitute a relatively small proportion of consumers' internet access bills.

By way of illustration, in 2020 Sky's total network costs (capex and opex) were ✂. While not all of this cost relates to increasing and operating network capacity, it still only equates to under ✂ per Sky broadband subscriber[8] per month. This is less than ✂ of the c.£41 that the average UK household spends on fixed telecoms each month.[9] Although Sky also pays wholesale access rental fees to Openreach (✂per month per superfast broadband line in 2020), these fees are effectively tied to wholesale price caps set by Ofcom which are explicitly designed to allow Openreach to recover its investment and operational costs.

Needless to say, UK consumers are generally prepared to pay these prices and subscribe to internet access services precisely because they value the content and other services that they can access over their internet connections.

Further, the largest internet companies already bear the costs of implementing and operating content distribution networking solutions at the edge or within ISPs networks so that their content and services are cached closer to end users. These relate to any direct incremental costs of the networking solution such that they are

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7 *Squid Game's success reopens who pays debate over rising internet traffic*. The Guardian, 10 October 2021.
8 Sky UK and Ireland broadband subscribers.
9 Telecoms Data CSV, *The Communications Market 2021*, Ofcom.

not borne by the ISP. Consumers and other end users of these large internet services ultimately pay for these networking costs.

Moreover, the implementation of these content distribution networks by the largest internet companies reduces the risk of congestion in the ISP network and the need for ISPs to invest in increasing the capacity of their networks generally. While large internet companies pay for the costs of installing their CDNs in or at the edge of ISP networks, the ISPs can spend less on increasing their overall network capacity.

While the most widely used internet services today do not depend on ISP investments in FTTP and 5G networks, even these investments could still be recoverable under the current net neutrality framework and Ofcom's approach to promoting FTTP and 5G investment more generally. With FTTP for instance, this year Ofcom has implemented its long-term policies for driving more investment in FTTP networks via the wholesale fixed telecoms market review (WFTMR). At its heart, is a move away from cost-based wholesale charge controls on Openreach's local access services towards inflation-adjusted price caps only applied to its 'anchor' 40/10 Mb/s wholesale product. Ofcom argues that these arrangements will allow investors in FTTP networks a fair opportunity to earn a reasonable return. Network operators do not require a change in net neutrality regulation to earn a reasonable return on their past and future investments.

BT (via Openreach) and altnets have started rolling out their FTTP networks. During Ofcom's consultation on its WFTMR proposals, BT cited publicly what it considered were the 'key enablers' necessary for it to make its FTTP investment.[10] A change to net neutrality rules was not one of these enablers. On the day of Ofcom's WFTMR statement, BT said that Ofcom's regulatory approach would allow it to make a fair return on its FTTP investment and consequently confirmed its plan to build FTTP to 20 million premises (which has subsequently been raised to 25 million). BT Chief Executive, Philip Jansen said *"For us, it is the greenlight we've been waiting for to get on and build like fury."*[11]

Unlike in the UK fixed broadband market where 'unlimited' broadband packages are common, mobile subscribers often pay more for larger data allowance packages such that there is a stronger correlation between what the end user pays and how much of the network capacity they use. This model will enable mobile providers to recover their 5G investment costs from those most willing to pay for more data but even if the mobile market moved to more unlimited data packages, there is no evidence to suggest mobile operators would not be able to recover their future investment costs.

Accordingly, there is nothing inherently unfair in how net neutrality regulation works in the UK. ISPs can recover their network costs, large internet companies often bear the costs of content distribution network solutions that decongest ISP networks to the benefit of all parties, including smaller internet companies. Consumers and other users of internet services ultimately pay for these costs in the prices they pay for internet access and services provided over the internet. Net neutrality rules support this balance in the ecosystem.

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[10] For example, see slide 13, *BT Group plc Q3 2020/21 trading update*, 4 February 2021.
[11] *BT confirms FTTP build plan to 20 million premises*, BT press release, 18 March 2021.

The current framework can cope with future increases in demand for data and network capacity

The requirement for UK ISPs to be fair, reasonable and non-discriminatory within the current net neutrality framework and previous incarnations has supported ISPs, CDN operators and internet companies collaborating responsibly to ensure the smooth running of internet access services and services provided over the internet. During this time there has been huge growth in internet access adoption and internet usage in the UK. All parties in the value chain have benefitted and profited. The system works relatively well and there is no reason to think that it will be unable to cope with the future evolution of the internet, internet access or internet usage.

As more services move online and network capacity increases (as has happened consistently in the past), the balance supported by these aspects of the current network neutrality framework would remain intact. Both ISPs and internet companies (and their CDN partners) would retain incentives and rules to work together to ensure the smooth running of their respective services. Any network costs would remain recoverable.

It is unnecessary to give ISPs greater freedom to discriminate and it would risk a 'two-tier' internet which would widen the gap further between the largest internet players who can afford to pay ISPs for better network quality and smaller internet companies who cannot. ISPs could favour certain services and content over others, including their own. This would reduce choice for end users and harm competition in the delivery of internet services.

If there were a weakening of the net neutrality framework, larger internet companies may be still confident that good quality access to their services is important to ISPs' end users and that therefore ISPs will retain an incentive to maintain this quality for fear of losing subscribers to other ISP networks. However, ISPs may still consider there is value in favouring its services or those of a particular large internet company over others. Either way, the same cannot be said for less popular internet services whose availability and quality will play a less significant role in end users' decisions over which ISP to use.

It remains the case that collaboration between ISPs and internet companies, as happens today, is the best way to ensure that ISP networks and content distribution networks are dimensioned appropriately to ensure the smooth running of services. The net neutrality framework supports this balanced collaboration.

Given this, the UK's net neutrality framework is fit for purpose and does not need to change.

Sky **November 2021**