Ofcom net neutrality review

TalkTalk submission

January 2023

NON-CONFIDENTIAL VERSION

1 Summary

1.1 This is TalkTalk's response to Ofcom's net neutrality review consultation (21 October 2022).

1.2 Ofcom is proposing modifying its guidance about how it will interpret/enforce the existing net neutrality legislation. We agree with many of Ofcom's proposals to allow a more permissive regime and its views on how the legislation should be modified. Whilst we agree with the direction of travel we feel that more changes will be required to ensure UK consumers enjoy the benefits of efficient network investment and avoid under investment in services and networks.

1.3 The areas we cover in our response and summary of our view is outlined below.

- Section 2 discusses the potential for ISPs to charge CAPs. Whilst we agree that charging is not appropriate for general Internet traffic we consider that it should be allowed in certain situations – for example in cases where CAPs charge their customers a premium for superior quality which will impose a material additional cost for ISPs
- Section 3 describes measures we think should be taken to encourage CAPs to use networks more efficiently
- Section 4 discusses the various proposals to allow greater retail service innovation with which we agree
- Section 5 outlines our view that the current approach where net neutrality rules are prescribed in detail legislation is unwieldy, inflexible and unresponsive and should be changed to framework based on a combination of principles outlined in legislation, a code of practice and Ofcom regulation
- Section 6 describes our view on more targeted traffic management

2 Charging CAPs

2.1 Under the current net neutrality rules ISPs are not able to charge CAPs for delivering traffic to their end customers[1]. Ofcom consider that this rule has resulted in good consumer outcomes:

- Been adequate network investment by ISPs (though not necessarily an optimal or efficient level) and ISPs have been able to recover these network investment costs (from consumers)
- Generally CAPs have acted to reduce ISP network load and costs through use of (for example) CDNs and caching resulting in improved 'network efficiency'[2]: it does not appear that Ofcom is claiming that there is optimal network efficiency (§7.39)
- There has been an open internet and effective ecosystem with no service restrictions for consumers and low barriers to entry for CAPs

[1] this is because ISPs effectively have a 'must carry' obligation which means that they have no leverage in any negotiation with CAPs – see consultation §4.11

[2] There are vary technologies that can reduce overall network cost. For instance, caching content close to the customer reduces the capacity required in the core network

2.2 Ofcom appears to conclude that allowing charging would not materially improve network investment and network efficiency yet could threaten the open internet ecosystem (§7.61).

2.3 We disagree with Ofcom's conclusion (in respect of the fixed market) for three reasons.

2.4 First, given the competition in the fixed ISP market it is highly unlikely that ISPs would be able to sustain charging CAPs for general Internet traffic so allowing charging for this traffic would have no impact on the open internet ecosystem.

2.5 Second, Ofcom's analysis appears to have overlooked that charging could allow new services to be launched that may not be offered under the current ban on charging. Under the current rules a CAP may have a new service they wish to offer that requires investment in the ISP's network – but this investment may not happen since without revenue from the CAP the ISP's investment would not be viable. We refer to this as the 'under investment' problem.

2.6 Third, Ofcom's conclusion that charging will harm the open Internet ecosystem does not hold for all services. For some types of services charging CAPs since would improve investment and innovation but have no detrimental effects.

2.7 For example, Netflix currently charges customers a £5 per month premium for getting services in 4K[3]. This type of package causes material cost for ISPs – 4K requires a minimum of 25Mbps – yet ISPs receive none of the money paid by customers. If charging were permitted, it could benefit customers in a number of ways:

- More likely that necessary network investment for these services will be made i.e. avoid the 'under investment' problem highlighted above (§2.5)
- Is more likely to result in efficient network investment since the charging could be set to encourage appropriate use of cache, CDN, multicasting, encoding etc
- Will ensure a more equitable recovery of cost between different customers so that customers who do not want the superior quality will not bear the cost of it[4]. In turn this will reduce ISP entry package prices

2.8 Charging for these type of services would not threaten an open internet:

- customers will continue to have unfettered access to all content (but not necessarily the very highest quality) – it can hardly be claimed that consumers have a fundamental right to access 4K services when HD services are freely available (particularly when many customers do not have access speeds available above 25Mbps in their geographic areas that are needed for 4K). In other words, the open internet ecosystem for 'standard' quality content would be unaffected
- if ISPs' charging is regulated under a non-discriminatory and fair/reasonable basis, then smaller CAPs will not be disadvantaged

2.9 Furthermore, the strong competition in the ISP market would ensure that ISPs could not set excessive prices or degrade standard access. We note that Ofcom considers that ISPs are

[3] This is the difference between the 'Premium' package (£15.99 per month) and 'Standard' package (£10.99)

[4] If charging is allowed customers wanting the additional quality will indirectly pay for it

'gatekeepers' (§4.7). This is not the case, there is strong competition (e.g. low market concentration, easy switching, high transparency) which means that if one ISP tried to impose unreasonable terms on a broadband customer they would switch ISP. Similarly, ISPs would be unable to impose unreasonable terms on CAPs given large CAPs can cause a material number of customers to switch ISP.

2.10 The approach to charging also needs to reflect the change that will come when the digital terrestrial television (DTT) networks are retired and all TV traffic is carried on ISP networks – the BBC recently announced that they expect this to start in the early 2030s[5]. This move will save the terrestrial broadcasters £100s millions each year[6]. It will also impose significant costs on ISPs to invest in the necessary capacity to ensure this traffic is delivered at good quality. However, there is a risk that the additional capacity will not be put in place if customers are unwilling to bear the additional cost i.e. there would be under investment in the network leading to lower quality. In this scenario, it would be against customers interests to prevent ISPs from receiving any of this cost saving to alleviate low quality. The closure of terrestrial networks will become a key social issue over the next ten years particularly for consumer/citizens who have no internet connection. We suggest that Ofcom and Government consider how this 'switch-over' might best be implemented and the role of ISPs and risk of under investment.

2.11 Therefore, we consider that Ofcom should encourage Government to modify legislation so that charging can happen in certain defined circumstances with appropriate protections – rather than continuing the existing blanket ban[7]. This could allow greater investment, innovation and choice without threatening the open Internet.

3 Encouraging network efficiency

3.1 As a result of net neutrality rules CAPs can treat end-user content delivery as a limitless and costless resource, and behave in ways that needlessly put extra strain on telecoms networks, resulting in higher costs for ISPs and their customers (due to network inefficiencies[8]), poor quality for consumers, or both. This can happen due to three main behaviours (§7.25, §7.36):

- Not using technologies such as compression, encoding and adaptive bit rate delivery to reduce the data capacity a particular content requires
- Causing unnecessary traffic peaks due (say) to scheduling downloads and software updates in peak hours (rather during off peak period)

[5] https://www.ispreview.co.uk/index.php/2022/12/broadband-woes-as-bbc-plan-to-switch-off-terrestrial-uk-tv-by-2030.html

[6] C4 Broadcast and transmission costs in 2020 was £99m in 2021. Arquiva's (who provide terrestrial transmission services in the UK) 'Media and Broadcasting' revenue in FY22 was £466m (though his may include some non-terrestrial TV revenues)

[7] Another mechanism that could theoretically allow these benefits is to allow a change in legislation that permits ISPs to charge retail customers for prioritisation (as suggested by Ofcom §6.42). A customer could then purchase a Netflix package (that allows access to 4K material) and an ISP package (that delivers 4K material reliably). However, this is complex for consumers and requires coordination of packages. A superior approach would be to allow charging on

[8] This considers both the ISPs' costs (in core and backhaul) as well as the CAPs costs (CDN, servers etc)

- Not using network technologies such as caching or CDNs to deliver traffic (which reduce capacity requirement on ISPs' networks)

3.2 Ofcom states that in most cases CAPs act reasonably to allow some network efficiencies: this is not due to altruism by CAPs but because they wish to improve their service quality – for example, they may use caching to reduce latency and packet loss which has the impact of reducing load on the ISP network i.e. there is some alignment of incentives. Ofcom also highlight that CAPs do not have full control of traffic peaks since these are dictated to some degree by consumers' choices[9]. Reflecting these two points, Ofcom concludes that "*we consider that the scope for CAPs to be able to make further efficiency improvements is unclear*" (§7.39).

3.3 We disagree and think that there is potential for improved network efficiency for the reasons below.

3.4 First, just because CAPs are using CDNs does not mean that network efficiency is optimal. It may be that CAPs use of CDNs is sub-optimal e.g. too few caches, too little content/traffic on the CDN. Or alternatively some CAPs using peering should be using CDNs. Relying on the indirect mechanism of CAPs wanting to maintain good quality is highly unlikely to drive optimal behaviour: in fact, the only mechanism that could drive optimal efficiency would be if CAPs paid all the costs they caused.

3.5 Second, though many of the CAPs do act 'responsibly' there remain 'bad actors' who drive inefficiencies. [✂✂✂] We recognise that some of the other proposed measures in Ofcom's consultation may help deter bad actors (§7.49) to some degree[10] – however we think the problem is likely to remain.

3.6 Third, Ofcom's analysis is static. Even if the rules had been effective in delivering optimal network efficiency under current market conditions (which they have not) they may not be effective in future in creating the right incentives for investing in new efficient technologies (such as multicasting).

3.7 Obviously, widespread charging of CAPs or allowing throttling/blocking of certain CAPs would be one way of encouraging efficient behaviour (and arguably the most effective). However, there can be detrimental impacts and anyway these are not permitted under the current legislation. However, we think that there are a number of measures (short of charging or blocking) that should be explored (some of these were used in 2020 during the pandemic to ensure ISP networks were able to cope with increased network loads):

- Having an agreed best practice guide/code of practice for CAPs that might include
  - communication to ISPs such as giving advance warning of peaks
  - scheduling of downloads outside of peaks

[9] The question of whether the CAP or the customer causes traffic is irrelevant. The relevant question is whether the CAP can take actions to improve network efficiency to which the answer is clearly yes. The customer can also take actions to improve network efficiency (since it takes 'two to tango')

[10] For instance allowing more targeted traffic management on a congested link that a bad actor is using is unlikely to have material effect on the bad actors. This traffic management will also cause 'collateral' damage to other CAPs using the same link (if the link is shared): albeit less collateral damage than no traffic management when all traffic suffers

- types of compression that should be used
- how they should connect into ISPs (e.g. when caches/CDNs/multicasting should be used) and that CAPs should pay the CDN equipment costs as well as space rental and power

- [✂✂✂]
- In the case that a CAP has failed to follow best practice, allowing ISPs to throttle (i.e. traffic manage) the traffic of just that CAP. Currently, this is not permitted under legislation or Ofcom's proposals
- Allowing ISPs to coordinate traffic management targeted at bad actors (under certain clearly prescribed circumstances). If all ISPs acted together then they would not suffer customer loss as a result of applying throttling

3.8 Another approach that would improve efficiency would be allowing ISPs to provide paid-for CDNs on their own networks (alongside third-party CDNs and those self-provided by the largest CAPs). This would provide virtualised shared infrastructure that could be used not only by large CAPs but also smaller ones which would both improve network efficiency and encourage innovation by lowering costs/improving quality for smaller CAPs[11]. Some may claim that this will result in 'fast lanes' which should be prevented – this overlooks that we already have many fast lanes such as for voice, leased line circuits and on the CDNs that mostly larger CAPs use today.

3.9 What these proposals do is to put in place some basic rules of the road. Whilst roads are open to everyone, all users are subject to rules (no speeding, no inconsiderate driving) and sanctions for breaches. What we are suggesting here is akin to that – open access with some basic rules to ensure a good experience for all.

4 Retail service innovation

4.1 Currently, traffic from an ISP's internet access retail services is treated the same with no differentiation in prioritisation – broadly a 'one size fits all'. Ofcom is proposing that ISPs can create services that have different levels of prioritisation. In particular they are proposing two key changes that will allow differentiated services.

4.2 Firstly, ISPs can offer premium services where all of a customer's traffic is prioritised (§6.42)[12].

4.3 Secondly, Ofcom (§6.58) also considers that, though not permitted under the current legislation, consumers could benefit if ISPs were able to offer services that prioritised particular classes of traffic.

4.4 Both would be subject to various protections such as non-discrimination, consumer transparency and reporting.

[11] Given competition between ISPs it is highly unlikely that this would result in degradation of non-CDN traffic. And given competition from other CDNs and delivery mechanisms it is highly unlikely that ISPs could charge excessive price. If there were other concerns these could be addressed by non-discrimination obligations

[12] In practice, what is newly permitted is the traffic management that enables this form of package.

4.5 We agree with both these proposals since they will allow consumers more service innovation, improved service quality and more equitable cost recovery between customers (which in turn would reduce entry prices for consumers[13]). Given competition between ISPs and the proposed protections, there are unlikely to be any negative impact on the open internet ecosystem. In practice they may be of more limited impact in fixed broadband given the high level of quality (low congestion) of networks currently. We encourage Ofcom to actively press Government to modify legislation to allow the second of these changes.

5 A more responsive regime

5.1 The current net neutrality rules which were developed around 2013 are set out in over 11,000 words of highly detailed and prescriptive UK law that was transposed from an EC Directive. As Ofcom itself and others have noted the legislation is unclear, self-contradictory and restricts behaviours that are in consumers interest (which Ofcom is in some cases circumventing by not enforcing). This is perhaps not surprising since the law is now almost a decade old and in that time internet access, services and technology have evolved significantly.

5.2 Yet, because the rules are written into UK law it is very slow and cumbersome to change them – for instance, the small change permitting ISPs to charge customers for retail packages prioritising particular classes of traffic will probably take several years. Once a change is identified it could take several years to be written into law due to the process of drafting and agreeing legislation, finding space in the legislative calendar and the legislative procedure of multiple readings in the Commons and Lords; which can be extended due to party political considerations.

5.3 We think that it is right to rethink the current approach since the highly detailed legislation is simply too unwieldly, inflexible and unable to respond quickly enough to the changing market circumstances. There is likely to be significant technology and service innovation in the next 10 years as well as the significant additional load and expectations of the network as DTT networks are retired – see §2.10 above. These will require changes in the net neutrality legislation yet the legislation is unable to change quickly enough.

5.4 We think that a better approach would be to replace the legislation with a code of practice[14]. Up to 2016, the open internet was protected solely through the Open Internet Code of Practice[15] that was developed by the BSG (Broadband Stakeholder Group). It was based on principles laid out by Government which focussed on the desired outcomes rather than detailed rules. This was highly effective in maintaining an open internet in part because of the competitive ISP market as well as the impact of other regulation and law (e.g. Competition Law). This shows that the open internet can be protected without the need for detailed and prescriptive legislation. Even though Ofcom repeatedly states that the net neutrality rules have worked well to date they have not considered whether in practice the outcome would be better without detailed rules.

[13] Given that the ISP market is competitive, charging extra for premium products is likely to reduce the price of other products

[14] Brexit allows the UK this opportunity

[15] http://www.connectivityuk.org/wp-content/uploads/2016/06/BSG-Open-Internet-Code-2016.pdf

5.5 A code of practice could be augmented by principles written in legislation and/or regulation developed by Ofcom – for instance, rules regarding enforcement, monitoring and transparency.

5.6 Though obviously this type of change is not within Ofcom's gift we consider that Ofcom should raise this concern with Government and push for change.

6 Targeted traffic management

6.1 We agree with Ofcom's proposals (§6.89) to clarify where targeted traffic management is permitted – for instance, traffic management of different categories of traffic. This will help minimise customer impacts when congestion occurs and also allow targeting of traffic management on links used by 'bad actors'. However, as we describe above (§3.7), we consider that in certain circumstances ISPs should be able to traffic manage the traffic of just the 'bad actors'.