Net Neutrality Review

BT response to Ofcom's Consultation

BT Group

Executive summary and introduction

Keeping the internet open and innovative, with customers fully in control of the content they access, is vital. Too often when net neutrality reform is debated, the 'open internet' is wrongly considered to be 'at risk'. That leaves other legitimate areas in which net neutrality rules can unintentionally play a restrictive role, underplayed. From an infrastructure perspective, net neutrality rules affect three important outcomes for consumers: innovation, efficiency, and investment. Undermining, or risking undermining, the quality of output in any of these matters will affect consumer and business outcomes, and the wider competitiveness of the UK.

We welcome Ofcom's guidance review in addressing some of these points. We urge a swift, evidence based, conclusion so operators can begin using flexibilities proposed. However, many elements of net neutrality reform are significant policy questions that only Government can address. A full review by Government is an essential next step.

We welcome Ofcom's proposals. We support Ofcom's key proposals on specialised services, premium retail offers, zero-rating and traffic management in congestion. We are pleased that Ofcom has clearly signalled a pro-innovation stance and afforded ISPs the flexibility to develop new services whilst providing clarity on the use of traffic management in congestion.

However, the internet ecosystem has drastically evolved since the net neutrality rules were introduced but the rules have hardly changed. The internet is no longer just set up for innovative new start-ups in their garage: many businesses have scaled and evolved into international multi-billion-dollar businesses, some of which dominate many aspects of the internet ecosystem; new business models and services have grown since the rules were envisaged, for example the role of CDNs in the value chain; and streaming and video content is widespread. Looking forward, expected developments include the move from satellite and digital terrestrial television to IP distribution for TV, the proliferation of connected devices and new services including the metaverse.

A 'simple' set of rules, which are the same for everyone and every circumstance, no longer makes sense. A full review is necessary which considers:

- The need for significant (and increased) investment levels in both mobile and fixed networks to meet future demand.
- Development of new technologies to facilitate new services and efficient network utilisation.
- Emergence of new business models with dynamic features for individual customer needs, and how these can be funded through new partnerships and relationships.
- Enhanced and aligned incentives to deliver good customer outcomes end-to-end.
- Links to public policy outcomes including the definition and funding of universality, public service media availability, future distribution of television, privacy, sustainability, and levels of digital infrastructure.

The net neutrality rules have created the risk of a very significant investment gap estimated to be at least [✂]. Our analysis shows a very significant investment gap driven by peak traffic growth as TV moves from satellite and digital terrestrial television to IP, the proliferation of connected devices and new innovative services. Amending the rules to encourage efficient distribution and opening up possibilities for new commercial models gives operators the best chance of closing that gap ultimately to the benefit of consumers.

Net neutrality has distorted incentives resulting in inefficient use of networks. Network resources, especially in mobile and core, are by definition finite and should be used as efficiently as possible. We strongly support Ofcom's view that encouraging network efficiency is a core principle in any review of the net neutrality rules. We estimate that efficient distribution of TV content over IPTV could avoid an inefficient investment [✂] in BT's shared core network alone. [1] Pending a Government review we believe Ofcom could play a role in coordinating industry to try to find solutions to this issue.

Preventing commercial models that reflect the two-sided markets in telecoms reduces investment. Even if BT's networks were used efficiently, we still predict a very significant investment gap. Today net neutrality rules effectively require such incremental investment to be funded by consumers. Placing this cost entirely onto end users does not work because:

[1] Internal BT analysis (2022)

- economically efficient investments that generate value to CAPs (or other third parties e.g. advertisers) but only indirectly to broadband/mobile consumers may not go ahead.
- investment is not focused on the right mix of services that broadband /mobile customers value because demand signals from purchasing these services is too indirect to guide specific investment.
- there are negative effects on digital equity as consumers who don't use content that drives the network investment end up paying for it.

Like in other two-sided markets, commercial freedom will enable innovative offers and pricing models reflective of demand by all customers (i.e. on both sides) – ultimately maximising consumer welfare.

Retail connectivity markets are by Ofcom's own assessment highly competitive, delivering for consumers, and the significance of this has repeatedly been overlooked in reviews of the net neutrality rules and indeed in the original impact assessment. What Ofcom said in 2010, based on there being competitive markets, still holds true today:

- "Ofcom's initial view is that a prohibition on network operators/ISPs charging content and applications providers for access to **consumers is unlikely to lead to efficient market outcomes**. In simple terms, **it means that consumers have to bear all of the costs in a 'two-sided market' in which content and applications providers clearly benefit from access to consumers as well as vice versa"[2].**
- Ofcom did find that it is theoretically possible that harm could arise (for instance if charges to content providers were too high) but noted "Currently with the information available Ofcom does not consider that there is a need for controlling future prices by network operators/ISPs **and in particular setting them at zero seems difficult to justify**, even if Ofcom had the power to impose such a pricing regime. **At this stage, there is little concrete evidence to hand as to what kind of pricing models will be proposed either by network operators/ISPs for access, or by content and applications providers for their products."**[3]

As such, a set of rules that prevents commercial negotiations between large content providers and ISPs is highly interventionist. Protections for the open internet should remain but can and should co-exist with effective commercial relationships across the internet value chain.

The net neutrality debate is frequently an 'in principle' one – we suggest policymakers seek ways to test customer outcomes empirically. At Ofcom's recent event, it was observed that 'CAPs cannot buy services that are not available because the rules do not necessarily allow for them'. This is an inherent problem: the current policy and outcomes are path dependent on past policy decisions. We suggest policymakers look to ways to test different outcomes empirically, for example:

- Testing ex-post outcomes from specialised service allowances being proposed by Ofcom.
- Deep dive assessments of how customer, innovation and investment outcomes have varied by countries where there are different net neutrality regimes.
- Exploring whether test beds and regulatory sandboxes could demonstrate benefits and risks from different commercial models.

In conclusion, a broad ranging Government review, considering both the benefit of existing rules and their costs in the context of current and future investment needs is urgently required.

[2] Ofcom (24 June 2010), "Traffic Management and 'net neutrality'", paragraph 4.39
[3] Ofcom (24 June 2010), "Traffic Management and 'net neutrality'", paragraph 4.40

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1 We support Ofcom's key proposals to enable innovative new services and manage congestion

1. We support Ofcom's key proposals on specialised services, premium retail offers, zero-rating and traffic management in congestion. There are limited number of points on which Ofcom can provide more clarity to further support innovation.

1.1 Specialised services

2. We are pleased that Ofcom has clearly signalled to industry that it supports the development of innovative ISP services including those enabled by 5G technologies. Likewise greater clarity on whether a service sits within or outside the rules will give greater freedom to innovate where services are unregulated.

3. On the conditions that have to be met for a service to be 'specialised' Ofcom has made two very helpful clarifications:

   a) First, ISPs can deliver services via a specialised service, even if the same service is available using IAS. For example, this would allow ISPs to support specialised equipment and services for [✂], giving customers a better quality of service. Helping use cases such as this to grow and become more mainstream benefits consumers but also all content providers as enhanced features will tend to flow over time through the wider value chain.
   b) Second, Ofcom's pragmatic approach to "*detrimental*" in the context of impact to IAS. We support Ofcom's exclusive focus on impacts that will have a significant impact on customer experience. Network resources, particularly mobile, are shared and some impact on IAS is inevitable but what matters is the materiality of that impact.

4. For a service to constitute an IAS, and therefore be regulated, it must be publicly available. Ofcom's definition of "publicly available" helpfully makes clear that private networks and 5G broadcasting are not publicly available and regulated, enabling ISPs to confidently invest in these services without risk of being designated as IAS at some later date which may undermine the original investment case.

5. To further support innovation, three additional clarifications would be helpful:

   a) Firstly, Ofcom helpfully states that services that are 'not normally' publicly available are outside the rules governing IAS. However, it is not clear what Ofcom means by 'not normally'. Our interpretation is that *"not normally publicly available"* could include services offered over a public network (for example, at home or on the move), if the services and enhanced connectivity is not normally publicly available. For example, a limited group of corporate customers could ask BT to optimise [✂] such that the guaranteed quality of service enables its employees to use the service on the move with lower risk of degradation. That service feature is 'not normally' publicly available. Or, for example, optimised connectivity for [✂] which can be operated only by employees of a private firm, even if carried over the public network. It would be helpful if Ofcom could confirm if it sees examples like these as *"not normally publicly available"*. As a second consideration, connectivity for some of these services may not offer connectivity to all end points of the internet which would mean the service is unregulated.
   b) Secondly, for a service to be 'specialised' the optimisation must be necessary to meet the requirements of the content or service. Clarity that optimisation can include just prioritising / giving a minimum amount of bandwidth for a specific use (rather than something more technical like, for example, better latency, jitter or packet loss) would unlock further innovation. Our interpretation is that this is acceptable – because we note that Ofcom explicitly states ISPs can offer premium retail offers with more bandwidth suggesting prioritisation would also be allowed for premium retail offers – and therefore we assume that prioritisation / higher bandwidth would **also** be considered *"optimisation"* for specialised services. This could be helpful for use-cases like cloud gaming which, for a premium experience (4K, 60 FPS), would need 40 Mb/s today and potentially up to 100 Mb/s.[4]
   c) Thirdly, Ofcom may have inadvertently limited the permissible scope of specialised services when it states that specialised services need to have quality requirements which cannot be met consistently by Internet

[4] Rudolf Van Der Berg (20 March 2019), What Google Stadia will mean for broadband and interconnection (and Sony, Microsoft and Nintendo), medium.com website

access *"during normal operation (e.g. when the network is not congested)"*. We understand that Ofcom's intent here is to prevent all services being argued to be specialised on the basis that when the network is in congestion they may not function properly. However, as we note above, guaranteed bandwidth will be crucial to some services and we understand that offering such guarantees would not be prohibited – the concern being that one could read what Ofcom has said to mean that this is not permitted because when the network is not congested the bandwidth may not be required. However, we would be grateful if Ofcom could clarify this point in its final statement and guidance.

1.2 Premium retail offers

6. Ofcom has confirmed that premium retail offers with different quality standards (such as latency, jitter and packet loss) are permissible within the net neutrality regime, subject to transparency conditions and treating all traffic equally. Our understanding is that this aligns to what was already permissible in BEREC's Guidelines.[5] However, if Ofcom's believes it has gone further, which we would welcome, it would be helpful if Ofcom could explain what further freedoms are now allowed. Ofcom's belief that there are consumer benefits from retail packages in which specific CAPs are differentiated on the basis of quality is very significant and something Government should pick up in a future review. If such a change was made ISPs could much better tailor their offers to needs of their customers which would represent a very significant advance on where we are today.

7. This direction of travel aligns to industry trends, for instance [✂]. This enables consumers to choose a retail package at a price point and quality level that suits their needs, thereby encouraging more innovative retail offerings and facilitating consumer choice. The standard Internet is unlikely to degrade with such an approach because of competition between ISPs, which gives ISPs strong incentives to continue to win and retain customers. However, we believe there would be further consumer benefit from allowing content- and services-specific retail offers with different levels of quality, as discussed in section 3.

1.3 Zero-rating

8. We welcome Ofcom's pragmatic approach to zero-rating. The permissive approach to zero rating reflects the more economically rational thinking that competitive markets are likely to deliver propositions and services that customers value and as such regulatory interventions should be limited. A few further points of clarity on "*Type Two*" (class-based) zero-rating offers would be helpful.

9. Ofcom states that for an offer to be '*genuinely open*', and therefore less at risk of regulatory intervention, CAPs should be able to join without undue requirements. We think Ofcom could helpfully provide further clarity of what this means in practice. For instance, we consider it acceptable to exclude a CAP from a class-based zero-rating offer where it is technically difficult to zero rate their content, for instance where it hosts external content outside of its IP range. It would also be helpful for Ofcom to make clear to CAPs that their participation in such offers also places an onus on them to work collaboratively with the ISP in question and failure to provide necessary information promptly may result in them being deprioritised for inclusion.

10. We also believe ISP requirements for joining zero-rating offers could include measures that encourage efficient network use. Clarity that wider objectives are not per se 'undue' would be helpful. For example, an ISP could choose to incentivise efficient distribution of TV content whereby all content delivered efficiently is zero rated. In our view, where the distribution technology is widely available, a requirement that it is used would not be "*unduly burdensome*". Enabling such offers would not only provide more choice and benefit to consumers but also support Ofcom's third policy objective on well run, efficient and robust networks.

11. Finally, in the context of "*Type Two*" class-based zero-rating offers, Ofcom "*expect[s] updates to be provided to customers whenever new relevant CAPs join the class-based zero-rating offer*".[6] In practice we would meet this requirement by including a list of CAPs within our offer on our public website but would be grateful if Ofcom could explicitly confirm this is acceptable.

1.4 Traffic management for congestion

12. Ofcom's proposals helpfully clarify that traffic management of congestion is permitted at a localised part of the network experiencing the congestion. As demands on networks continue to increase, we expect to rely more heavily on traffic management as a tool to manage unexpected traffic peaks and to protect network resilience.

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[5] BEREC (2022), Guidelines on the Implementation of the Open Internet Regulation, 9 June 2022, paragraphs 34 and 34a. – d.
[6] Ofcom (21 October 2022), "Net neutrality review: Consultation", paragraph 5.58 (e).

13. However, compliance with the rules remains challenging given the need to identify "categories" of traffic. During congestion events it can be many different categories of traffic which are causing the congestion, without clear distinction, for instance content on Facebook can be a mix of video, general content etc. Moreover, due to the difficulty of inspecting and categorising each data packet ISPs are effectively unable to identify and manage only the traffic or type of traffic causing the congestion or indeed only the traffic which is non-urgent. Not all content in a category is equal, for instance a video call from a doctor giving urgent medical advice is more critical than other calls that are in that same category.

14. Whilst we acknowledge that more targeted traffic management would require legislative change, we encourage Ofcom to support the development of technical solutions which provide more granular traffic information. This would allow more targeted traffic management during congestion within the current constraints of the rules.

15. The current framework also constrains ISPs from promoting efficient use of the network – so we believe Ofcom and Government need to go further in this area. We explore this further in section 5.

1.5 Additional monitoring

16. We note that, in the areas of traffic management, premium retail offers and specialised services, Ofcom has proposed expanded regulatory monitoring and reporting, in order to ensure consumers are sufficiently protected. Given that the majority of Ofcom's proposals in these areas are clarifications of existing rules, and Ofcom has concluded the frameworks are generally working well (so no evidence of material consumer harm), we question the need for enhanced monitoring noting that overbearing regulatory supervision may itself dissuade legitimate innovation. We also note that the proposals are operationally onerous for Ofcom and for ISPs.

17. Notwithstanding the above, if Ofcom proceeds with additional monitoring, clarity as follows would be helpful:

    a) For premium retail offers, will ISPs be required to provide details of a "*self-assessment*" for every premium retail offer, in regular reporting? Or only upon request?

    b) For the use of traffic management to mitigate congestion, are ISPs expected to collect information in a format that works operationally for them as an audit trail, or will Ofcom be requesting regular reporting in a specified format consistent across ISPs? The latter would create additional burden on the operational teams.

    c) Where an ISP launches a specialised service, will ISPs be required to provide details of a "*self-assessment*" as a matter of process, in regular reporting?

2 Why more fundamental change is needed

2.1 BT predicts an investment gap for BT alone of at least [✂], other third-party studies

18. There is already evidence of an investment gap emerging, i.e. that ISPs will be unable to meet future anticipated demand unless the current approach to net neutrality changes. Despite the competitive nature of markets (and the drive to invest to maintain good customer outcomes) there are a range of risks to operator plans. This means that Ofcom should not conclude that everything is on track to deliver the step increase needed for future 5G investments let alone continue to deliver stable levels of investment. We do not restate our reasoning and evidence here but refer Ofcom to our submissions to the mobile strategy review. [7]

19. For BT alone we estimate an investment gap of at least c.[✂] across our fixed and mobile networks even if all efficiency gains described in section 4 were realised. We set our reasoning and evidence below.

20. Traffic on our networks continues to increase but the growth rate is uncertain. Historic and forecast traffic growth on our shared network is shown in Figure 2.1 below. We forecast traffic will plausibly increase [✂] over the 8-year period 2023-2030.

Figure 2.1 Historic and forecast traffic growth: BT estimates [✂]

[✂]

*Source: [✂]

** Source: [✂]

***Source: Ofcom's future approach to mobile markets]

21. We have estimated an annualised additional capacity driven capex of [✂] required by BT to meet traffic peaks over the 8-year period 2023-2030. This is equivalent to [✂] up to 2030 (cumulative). This comprises [✂] in relation to mobile networks (end-to-end capacity costs including access) [✂] for fixed networks (core and transport costs excluding access). These costs are driven mainly by:
    - faster connectivity and number of connected devices including to support HD and UHD video streaming ([✂])
    - migration from Digital Terrestrial Television (DTT) and Digital Satellite Television (DSAT) to IPTV including live and special event viewing ([✂]), and
    - metaverse ([✂])
22. In calculating the investment gap, we have placed limited weight on the capacity requirements of new innovative services ([✂]). This is due to inevitable uncertainty associated with such services. As such Ofcom's proposals on specialised services would be of limited importance to closing the gap we have identified. However, should such innovative services emerge, significant further investment would be needed. It is unclear today how much of that investment could be covered by selling specialised services versus how much would be needed to improve IAS quality more generally. If it is the latter, then the investment gap would be even greater.

23. The solution to closing the [✂] **investment gap** requires change on multiple levels:

    - As TV migrates to IP it is crucial that the most efficient means of distribution is chosen. This includes [✂]. For instance, we have estimated that in a "do-nothing" scenario it would cost BT [✂] **to the end of 2030** to expand its shared core network to meet live and special event viewing.[8] We consider that [✂]. Even with this mitigation a significant proportion of **at least** [✂] **(of the** [✂] **investment gap) will remain unfunded and therefore unrealised**.[9]
    - Ensure that all other traffic can be **managed efficiently** and that CAPs are incentivised to use the most efficient route (we recognise this will require change in legislation). See section 4 for our further views on managing traffic efficiently.

[7] BT Response to Ofcom's Mobile Strategy Review. See Section 2.

[8] [✂]

[9] The remaining gap is estimated as follows: [✂]. In relation to specialised services Ofcom has stated "ISPs may offer specialised services to CAPs" (Ofcom para 8.51). [✂] We note that in the best-case scenario where all traffic related costs for new and innovative 5G services could be recovered under the specialised rules this would [✂].

- Secure a regime that enables communications networks to experiment with and adopt **new commercial models** including but not limited to partnerships to deliver integrated services and solutions.

Declining marginal efficiencies unlikely to offset forecast traffic growth

24. The investment gap, driven by continued traffic growth, is unlikely to be sufficiently mitigated by further decreases in unit costs,[10] noting Ofcom states: "*We expect unit costs will continue to decrease, but we accept that the level and the rate of further reductions is uncertain*".

25. BT internal data suggests [✂]. This is different to past trends whereby, according to [✂], mobile data traffic growth has been largely offset by the rate of decline in unit costs [✂], respectively between 2012-2020 and where industry ARPU and revenue are forecast to be nominally flat at best. [11] [12]

Third parties have forecast either an investment gap or significant OTT driven traffic related costs

26. We note that third parties have estimated a potential UK (mobile) investment gap as well as significant fixed and mobile OTT 'traffic sensitive' costs in Europe. For example:

- The **UK Digital Connectivity Forum** report by Frontier Economics forecasts a mobile network investment gap under existing trends (capex/revenue) of around £13bn-£15bn for 4 stylised mobile operators over 8 years or around **£400-550m per operator per year** to bring what Frontier refer to as "enhanced 5G quality and coverage" to semi-rural areas – unless incremental revenue was forthcoming.[13] Key findings are as follows:

  (i) The industry is projected to invest **c £9bn for 5G by 2030**.

  (ii) This investment can deliver substantial 5G investment but the costs of deploying networks to meet both expected traffic demand and UK-wide deployment of basic 5G across the existing mobile network footprint could lead to **a c. £3bn-£5bn investment gap for the industry by 2030** – this likely means that the UK wide rollout of 5G will not be achieved by 2030.

  (iii) Deploying networks with enhanced 5G quality and coverage to semi-rural locations would require an **additional £10bn investment - significantly increasing the investment gap**.

  (iv) To deliver the full capabilities of 5G by investing to enable all advanced 5G use cases in urban locations (e.g. ultra-low latency) or bringing reliable 5G connectivity to the rest of the UK implies still larger investment gaps.

- The **Frontier report for European operators**[14] notes data traffic on telco networks continues to grow at an exponential rate driven by HD video streaming delivered 'over-the-top' (OTT) to end users by internet platforms. Telcos have therefore had to ensure that their networks can support this exponential growth in OTT traffic. However, Frontier notes that "While the [telecoms] market is 'two sided', telecoms operators have effectively only been able to recover network costs from end users. There is a policy debate on whether the current structure of prices is optimal given the 'two-sided' nature of the internet market." Frontier then estimates the costs that are associated with the 'traffic sensitive' elements of fixed and mobile telecom networks across Europe that can be attributed to OTT traffic (driven by CAPs).

2.2 An investment gap risks impacting resilience

27. A restricted framework for investment alongside the restrictive rules on traffic management may also undermine network resilience. Our core network capacity reflects our [✂]. However, we experience unexpected peaks in network traffic. To date our network has been able to cope with these peaks because [✂]. But we are seeing increased peak volatility that is hard to predict and that therefore increases the risk of capacity falling short of demand.

28. We agree with Ofcom that if ISPs are using resilience headroom more regularly to avoid congestion in the network, it could make networks more vulnerable to technical or security threats. Should a technical failure or security threat occur at the same time as a traffic peak, there may be less headroom available to maintain

[10] [✂]
[11] [✂]
[12] Analysys Mason (Feb 2022), Western European telecoms market: trends and forecasts 2021–2026
[13] A Report for DCF by Frontier Economics (2022), DCF Report: The Investment Gap to Full 5G Rollout, 7 Sept 2022
[14] Frontier Economics (2022) 2022-03-30-Frontier_Fair-Share_FINAL-REPORT.pdf (telefonica.com), 31 Mar 2022

network resilience. Reserving headroom for events not related to peaks in demand reduces this risk. The increasing variety of resilience risks to networks and infrastructure noted by Ofcom in its Annual Plan Consultation 23/24 might cause further demands on headroom capacity. [15]

[15] Ofcom (2022), "Proposed plan of work 2023/24", 14 December 2022, para 2.2

3 We think Government should go further to enable innovative new services

29. We think Government should build on Ofcom's work to change the rules to enable more innovation through premium retail offers, zero-rating and device specific plans (through changes to the rules on tethering).

3.1 Premium retail offers

30. Ofcom states that allowing prioritisation of an individual content provider's content within IAS could bring consumer benefits but requires legislative change. We support such change because we, like Ofcom, consider that tailored service provision, in competitive retail markets, to be in consumers' interest. Retail competition on quality parameters, and the prospect of attracting a particular group of customers who value higher quality and are willing to pay a premium to ensure this, is a driver for ISPs to invest in their networks to further improve quality of experience. Examples of services that could be unlocked include:

    a) [✂]
    b) [✂]
    c) [✂]

31. We do not see such changes as threatening the Open Internet but if specific concerns were identified Ofcom would be well placed to issue further guidance on what is and isn't permitted and ultimately could bring targeted enforcement action if material harm was identified.

3.2 Zero-rating

32. Current legislation[16] prohibits access to zero-rated content once a customer's general data allowance runs out. This is contrary to what consumers expect when they enquire about zero-rated data passes and has limited justification. This mirrors Ofcom's view, which is that "*in principle, [Ofcom] recognise that there would be benefits in allowing zero-rated access to continue once the data allowance has been exhausted (subject to certain concerns discussed above)*".[17]

33. The restriction is intended to prevent operators from offering limited forms of the internet where only chosen services are available. In reality this is not what operators are seeking to do, and a far more proportionate approach could be devised whereby Ofcom can intervene if harm arises rather than withdrawing services from customers that they clearly value.

3.3 Terminal equipment

34. The net neutrality rules permit customers to choose the terminal equipment through which they access the internet, for instance an iPhone or Samsung phone. However, the rules go further than choice of the primary device and also permit customers to tether as many devices as they wish to that primary device. This impacts our ability to manage our network as we have limited mechanisms for dealing with issues with congestion at cell sites where customers are tethering multiple devices or putting SIM cards in routers to share with friends or family. This can result in a poor experience for other consumers in the local area. In addition, since the rules were introduced, there has been a proliferation of connected devices including fitness trackers, connected watches, smart TVs, and VR headsets. As these become SIM enabled, [✂]. However, if devices can be tethered to that device we cannot control data usage. Similarly, if [✂] we face the risk that the customer can use it in other devices by tethering. This impacts customers because we are [✂] in our consumer contracts.

35. Ofcom states that the impact of the terminal equipment rules on service innovation and efficient network management is likely to be small.[18] We believe the impact is significant. For example, amongst unlimited SIM Only subscribers, those who place their SIM cards in routers constitute only [✂] of subscribers but as much as [✂] of data usage, as shown in Figure 3.1 below.

Figure 3.1 – [✂]

[✂]

[16] Article 3(3) of EU Regulation 2015/2120, implemented into UK law by The Open Internet Access Regulations 2016.
[17] Ofcom (21 October 2022), "Net neutrality review: Consultation", paragraph 5.82.
[18] Ofcom (21 October 2022), "Net neutrality review: Consultation", paragraph 9.25.

36. Ofcom states that ISPs could, for example, set data allowances and/or fair usage policies consistent with typical mobile usage to deter the use of mobile packages with device(s) that would generate much higher traffic volumes.[19] We don't believe this adequately addresses the issues we have raised and such solutions are not in the customer interest. Customers value unlimited tariffs; to restrict usage is effectively not offering an unlimited tariff. [✂].

[19] *Ibid.*

4 Incentivising Efficient Distribution of Traffic

37. We strongly support Ofcom's view that the net neutrality rules should have efficient network use as a core objective. This was not a core objective of the existing rules which took the view that any capacity constraints would be short-term and transitory.[20] As peak traffic volumes continue to grow, and unit cost efficiencies have largely been realised (see section 2), it will be unsustainable to meet future demand through network expansion alone.

4.1 The current rules constrain ISPs from managing inefficient traffic

38. There are no mechanisms in the current rules to use traffic management or charging as a means to improve efficient use of networks. The rules grant CAPs a general right to distribute their content over ISP networks and the traffic management rules are limited to addressing congestion by deprioritising categories of traffic. Inefficiently delivered video content for instance must be treated exactly the same as the equivalent content delivered efficiently. Given the general right to distribute over ISP networks, charging content providers to incentivise efficient use (or to pay the costs associated with their actions) is also not possible. ISPs face a dilemma: either they increase capacity to accommodate all traffic regardless of efficiency of delivery or they don't and instead manage entire categories of traffic in congestion, negatively affecting all content within the category. In reality the second option is somewhat theoretical as the rules require ISPs to identify all content within a category in order to traffic manage the category which is technically challenging.

4.2 CAPs are not sufficiently incentivised to use the network efficiently

39. We agree with Ofcom that ISPs are incentivised to work closely with other players across the value chain to try and ensure traffic is delivered in a way customers expect. ISPs want to collaborate with CAPs to identify the most efficient delivery methods and plan for exceptional events. However, in the current framework we are reliant on the mindset of the CAP, resulting in varied levels of collaboration. Even where CAPs are generally collaborative, this will always be limited by their own interests. If the impacts fall solely on the ISP – for instance increased cost – it is very difficult to persuade content providers to change their behaviour, unless they see a tangible benefit in exchange.

40. We provide some examples below of how these issues have played out in practice.

- The first example concerns choice of distribution technologies in anticipation of traffic peaks during the FIFA 2022 World Cup driven by viewing in UHD on BBC iPlayer. Because of the nature of live TV traffic (high bitrate, concurrent viewing), the most efficient delivery method is via embedded caches[21]. This results in enhanced customer experience and minimises the need for investment in capacity which could go unused after the event. It also reduces BT's costs of distribution. [✂].

- The second concerns non-time sensitive traffic. Some CDNs are working with games providers to shift download traffic away from the busy hour. For example, we are aware of global CDN operators that are already in discussion with game providers and CAPs to time-shift non-time critical downloads of software or games. This helps to reduce throughput/capacity in the busy hour without a noticeable impact on customer experience. There are CAPs however who are less willing to collaborate or consider the wider impact of their decisions. A good example of how better coordination is possible was during the pandemic when Ofcom and ISPs worked with gaming providers to coordinate download timings and encourage time-shifting. It took significant effort before some CAPs changed approach and it was always voluntarily so there was nothing to compel them to do so.

- The final example concerns collaboration across the value chain. There are some CDNs (e.g. [✂]) which are embedded in multiple ISPs networks, so where adopted by CAPs this would drive efficient delivery of traffic across the UK broadband network. However, use of these CDNs may have minimal immediate benefits to the CAP as depending on traffic type they may result in limited change to customer experience and lower

[20] Regulation (EU) 2015/2120 of the European Parliament and of the Council (2015), Recital 15: "Recurrent and more long-lasting network congestion which is neither exceptional nor temporary should not benefit from that exception but should rather be tackled through expansion of network capacity."

[21] This is because each individual stream going to a single end device in customers' homes or out-and-about would not need to be transmitted across the entire core of our network. Instead, a single copy could be transmitted to our edge, closer to the end customer, from where the content could be served to millions of devices.

hardware costs may be offset by integration costs. There may therefore be no incentive for the CAP to consider adoption of such technologies. Likewise, if there are two options that deliver content to the same quality, CAPs will always choose the least cost to itself rather than the lowest cost overall – if CAPs faced the cost of delivery, that wouldn't be the case or CDNs may be encouraged to become more efficient.

41. CAPs have a significant ability to affect efficient network utilisation, through their choices on method, timing and technology of content delivery, as well as transparency of what they are delivering. For example:

    a) Deciding which distribution technologies to use, which has a direct impact on our network. Depending on the type of traffic, this could include using embedded caches (e.g. for content viewed by large numbers of users), utilising existing CDN/peering capacity, avoiding transit and utilising multicast for live TV delivery.
    b) Avoiding network peak demand if possible (i.e. time-shifting elastic traffic).
    c) Using existing spare capacity wherever possible (to avoid additional transit and peering capacity).
    d) Generally monitoring their capacity needs (such as monitoring of traffic levels and regular planning to identify peak events and any traffic which can be delivered outside of the peak).
    e) Including standardised information in the traffic "header" to help ISPs identify the category of traffic and manage it accordingly.
    f) Using efficient codecs for decomposing media files.

42. Moreover, on a forward-looking basis, if the right incentives are in place, one would anticipate that CAPs, working with ISPs, may find further ways to reduce strain on networks.

4.3 The problems associated with inefficient use are now becoming critical

43. Incentivising the above behaviours more consistently would go some way to close the investment gap we identify in section 2. For instance, if DSAT and DTT were to be switched off in 2028 and 2035 respectively, we estimate that in a 'do-nothing' scenario it would lead to investments in BT's shared core network of [✂] to the end of 2030 to meet live and special event viewing.[22] We consider that deploying [✂], depending on deployment timing and adoption within the BT customer base, could mitigate this investment. Multicast solutions are already commercially available: BT has been operating a multicast TV service, to [✂] customers for over 10 years, and solutions to deliver to Connected TVs and TV devices using multicast adaptive bit rate (mABR) are being operated by some EU telcos. [✂]. At present the incentives for CAPs to adopt efficient multicast solutions are not strong enough and ISPs do not have strong enough levers to manage less efficient technologies.

44. We also note that multicast solutions also support ESG objectives. Our analysis shows that adopting a more efficient multicast solution for Live TV distribution could reduce BT's core network power consumption by [✂].[23] That's the equivalent of enough energy to power [✂] households per year by 2030 and excludes power consumption from CAPs servers.

45. What is more, we anticipate that additional savings could be made if all other traffic is managed efficiently, and CAPs were incentivised to use the most efficient route.

46. On the scale of the concern, we note that Ofcom believes that where traffic volumes are continuously growing, this reduces the cost of inefficient network investment because the usual network load in the busy hour tends to soon reach previous peak traffic levels.[24] This thinking does not align with Ofcom's stated objective to promote efficient networks, as network investments should be at the time they are needed, and because on a future looking basis the increases will be far greater. In any case we have limited control over where the peaks impact our network so we may expand capacity on one part of the network and then need it somewhere else the following year.

4.4 Ofcom can go further to incentivise efficient network utilisation

47. Resetting the right incentives requires legislative change. However, in the meantime, Ofcom can play a critical role in improving network efficiency by using its extensive soft power to bring industry together to agree solutions and guide on reasonable behaviour. Helpful initiatives could include:

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[22] Internal BT analysis
[23] BT Networks and Applied Research (2022), Energy consumption in the UK 2020, KWH-to- CO2 (rensmart.com)
1. Assumes [✂] per household per year and [✂] of Live TV over efficient solutions. 3. [✂]
[24] Ofcom, "Net neutrality review: Consultation", 21 October 2022, para 6.84

a) Outlining principles of efficient content delivery which all players within the internet ecosystem should take account of. This could include the expectation of genuine collaboration with players across the value chain, efficient distribution technologies, and taking steps to monitor one's capacity needs (such as monitoring of traffic levels and regular planning to identify peak events and any traffic which can be delivered outside of the peak).

b) Supporting the development of tools and techniques that enable efficient traffic management such as the identification of traffic types (traffic tagging). Whilst ISPs have oversight of the types of traffic on their networks (e.g. we can identify live TV content or content from a specific CDN) we think industry can work together to improve identification. This would enable more targeted traffic management of inefficient traffic. In many cases, this information may already be available, but industry players are not incentivised to provide it.

c) Support industry to agree technical standards for efficient distribution of different traffic types. For instance, multicast for live television, perhaps co-ordinating this through a body such as the DCF, the OTA or Digital Catapult.

d) Monitor leading indicators of the network being stretched.

48. These actions would strongly align with Ofcom's third policy objective and signal to all players the importance of efficient use of the network to secure the long-term sustainability of networks.

4.5 Government can make fundamental and future proofed change

49. The current net neutrality rules negatively impact incentives across the value chain jeopardising future network investment. A government review is needed to design a new regime that safeguards the open internet but that also takes full account of potential wider impacts on efficient use of networks. This could include:

- Enabling ISPs to effectively target their traffic management measures on less time- or quality- sensitive traffic.
- Enabling ISPs to target traffic management measures on less efficient distribution methods.
- Enabling a pricing mechanism to incentivise CAPs and CDNs to efficiently use networks.
- Considering whether legislative intervention is needed to ensure CAPs have sufficient regard to the impact of their actions including on the resilience of networks.

5 Revising the rules to enable a commercial model delivering for consumers

5.1 Introduction

50. Given the trends we describe in section 2, the competitive intensity of telecoms markets and evidence of a growing investment gap, we think that reforms to enable a more commercial model would deliver better consumer outcomes. Such an approach would reflect the competitive two-sided market in which ISPs operate, promote innovation and investment and could be appropriately designed to still support the Open Internet.

5.2 Two sided markets are commonplace and absent market power cause no concern

51. Two sided markets are commonplace and enable, rather than curtail, innovation and investment in platforms. For example:

    a) Advertising and subscription funded video streaming platforms: increasingly both sides of the market pay the platform operator reflecting the value they place on accessing the platform and its content / users. This commercial model can support greater innovation and investment in the platform and enables access to cheaper or free content for many consumers, increasing availability beyond what would be expected if the two-sided charging model was curtailed by regulation e.g. Netflix, YouTube and TikTok.[25]
    b) E-commerce platforms: such as Deliveroo, eBay, Uber and AirBnB have also applied similar commercial models for many years by recognising the value that all parties gain from accessing the platform. For example, Deliveroo makes both customers and restaurants pay a fee to use the platform.[26]
    c) Newspaper (and other media) markets: there are a range of commercial models that seek to maximise circulation and readership including 'freemium' advertiser funded models (e.g. London Metro) and subscriber and advertiser funded models (e.g. The Times) where both readers and advertisers make payments to the newspaper.

5.3 From a competition perspective there is nothing unique about telecoms that would undermine the benefits of two-sided markets

52. Ofcom has consistently found retail fixed and mobile markets to be competitive. For instance:

    a) In Ofcom's 2015 Strategic Review of Digital Communications Consultation, Ofcom acknowledged that: "*UK consumers have benefited greatly from end-to-end competition in mobile services.*"[27]
    b) In Ofcom's February 2022 mobile strategy discussion paper, it states "*Competition among MNOs and mobile virtual network operators (MVNOs) has delivered a wide choice of services and helped many customers to use more data while spending less. On average, between 2015 and 2020, the amount of data people used increased over three and a half times (369%), while prices fell by around one fifth (22%).*"[28]
    c) Ofcom has also found retail fixed telecoms markets are competitive: no fixed retail markets have a SMP finding.[29]

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[25] Netflix has recently announced that it will start advertising to provide more choices for consumers and a premium non-linear TV brand experience for advertisers (alongside Netflix's current subscription service model). Forbes (2022), What Does Netflix's New Ad Model Mean For Advertisers? (forbes.com), 29 Nov 2022. YouTube and TikTok have introduced channel subscription services alongside their existing advertising funded 'freemium' model. Forbes (2022), Subscribe And Thrive: Why TikTok And YouTube Adopted Twitch's Subscription Model (forbes.com), 25 Oct 2022.

[26] Deliveroo also offers a monthly subscription programme called "Plus" where members (users) pay a fixed monthly fee and get unlimited free delivery from all restaurant and grocery partners on orders meeting the minimum spend requirements. Consumers | Deliveroo plc (LSE: ROO)

[27] Ofcom (2015), Strategic Review of Digital Communications, 16 July 2015, para 9.90

[28] Ofcom (2022), Ofcom's future approach to mobile markets, 9 Feb 2022, para 1.9

[29] In Ofcom's Wholesale Fixed Telecoms Market Review (WFTMR), Ofcom finds "*the largest ISPs all offer customers a choice of products offering different broadband speeds, charging a premium for packages offering higher speed. Some ISPs offer more products than others and there are differences between ISPs in the range of speeds offered. There are several examples of higher speed products being available at prices that are the same as, or even lower than, those for products offering lower speeds.*" Ofcom (2021), 2021 WFTMR Volume 2: Market analysis (ofcom.org.uk), 18 Mar 2021

53. There have been low barriers to switching in retail fixed and mobile markets for many years with Ofcom's recent initiatives making it even quicker for customers to switch.[30] In addition, we observe that ISP competition has also been driving more choice of CAPs. For instance, ISPs have increasingly been following super-aggregator strategies in response to customer demand for access to all services.

54. More broadly, the competitive environment in which ISPs operate includes informed consumers, proactive and well-resourced CAPs, and third parties acting on behalf of customers to inform them too. Given all of the above, even without net neutrality rules, ISPs would not have the ability to artificially limit capacity or otherwise harm the Open Internet.

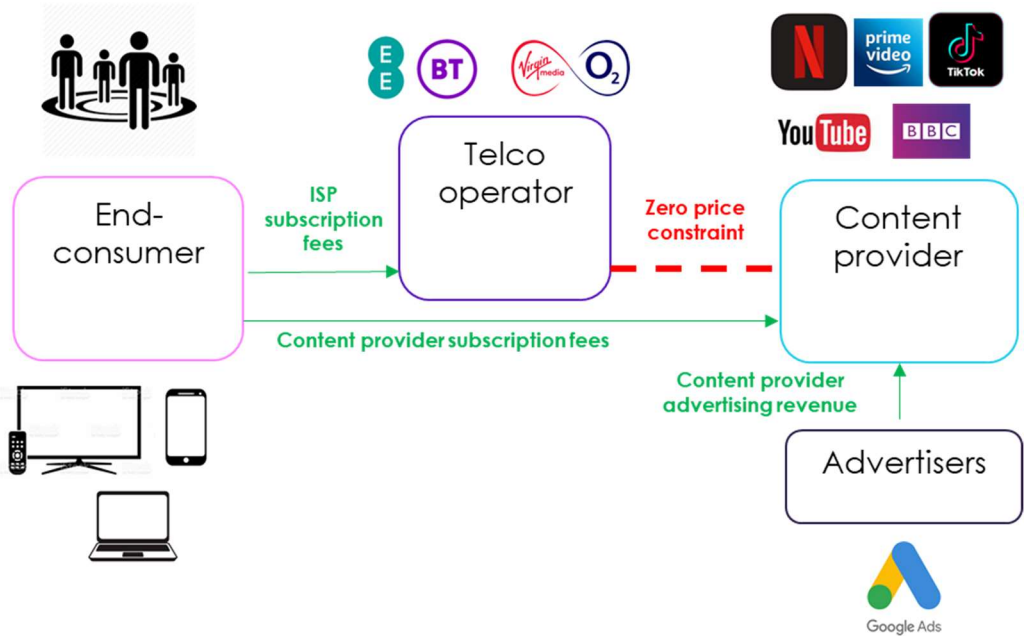
55. In any event, Ofcom and the CMA already have extensive powers to protect consumers and businesses from harm including competition law, SMP regulation and the General Conditions. New ex-ante regimes will further limit the risk of anticompetitive behaviour in digital services markets where platform operators have strategic market status (SMS).

56. Evidence from other markets with less intrusive forms of net neutrality does not suggest consumer harm e.g. US, South Korea, Japan and Singapore. These examples suggest that the policy aims of an Open Internet can potentially be achieved without intrusive forms of net neutrality – such as a zero-pricing constraint – that unduly curtail innovation and investment and where the costs exceed the benefits of the regulation.

5.4 Net Neutrality regulations hinder efficient market outcomes, limit investment and have negative distributional effects

57. Net Neutrality regulations represent a significant regulatory intervention that breaks the fundamental link between usage and price. Net neutrality essentially sets the price to one side of the market (i.e. price to CAPs) to zero and forces telcos to recover all its investment costs from consumers via broadband and mobile prices. See Figure 5.1 below.

Figure 5.1 Two-sided telecoms markets: net neutrality imposes a zero-price constraint on one side



58. In its original 2010 policy position, Ofcom has previously stated in relation to two sided telecoms markets: "*Ofcom's initial view is that a prohibition on network operators/ISPs charging content and applications providers for access to consumers is* ***unlikely to lead to efficient market outcomes****. In simple terms, it means*

[30] Ofcom's latest rules mean consumers can switch mobile provider by sending a simple, free text message to their current provider. The 'text-to-switch' process gives consumers more control over how much contact they have with their current provider: Ofcom, Switching mobile phone provider - Ofcom. Ofcom rules also mean broadband consumers can leave their provider without being penalised if they're not getting the broadband speeds they were promised when they entered the contract. Under this new process, consumers don't need to contact their current broadband provider at all. Instead, the new provider can arrange the transfer for you. We're making it easier than ever to switch your broadband provider - Ofcom. Easier broadband switching is currently being extended to include cross-network switching (for example, between Openreach's and VMO2's networks) under The One Touch Switching Company's work.

that consumers ***have to bear all of the costs in a 'two-sided market' in which content and applications providers clearly benefit from access to consumers as well as vice versa."***. [31] This is in stark contrast to Ofcom's latest position which now argues that a zero-price constraint is, in practice, unlikely to be inefficient nor limit potential investment.

59. Two-sided markets should not be considered a zero-sum game i.e. removing a zero-pricing constraint on one side of the market does not simply shift money between two parts of the value chain. Rather charging on two sided markets to reflect relative network benefits enjoyed by both sides accessing the other enables higher levels of investment and investment focused on the right services.

60. A zero-pricing constraint **lowers investment and innovation.** Economically efficient investments – **both in services and applications as well as in the networks delivering them** may be delayed or not go ahead at all. For example, an application or service provider (e.g. Meta) may require a certain service level (including possibly capacity) to run their application or service, but end consumers may not be willing to pay for the additional service level if they have not experienced the service or application before. Many online services are experience goods so end users may not know what network quality is needed to deliver a good user experience for innovative applications.

61. In contrast the service or application provider can directly request telcos to offer particular network speed or quality (including potentially variable across day or geography) and telcos may then charge e.g. Meta depending on cost and value.

62. This could **bring forward service innovation**. Application and content providers will be able to specify what level of network service quality their innovative service requires, and network providers could deliver this at a competitive price.

63. If the market were to enable many such deals, then this would also benefit general end users of the network indirectly (even where they are not direct customers of the innovative service). This is because every such deal will provide a contribution to common and fixed network, in addition to paying for the direct cost of the tailored service level. In turn, this could reduce the common and fixed cost contribution of end users (and hence the price they pay) **and/or** also **create greater scope for further network investment**.

64. Finally, the NN regulations can have negative impacts on digital equity as consumers who don't use content that drives the network investment end up paying for it. In a two-sided market model those benefitting from the service (e.g. Netflix) would bear the network investment cost of it – the benefits could accrue to Netflix, their customers, their advertisers. Absent net neutrality, content providers may bear the cost of distribution which could flow directly to those customers using the service, in this way the link between usage and cost would be restored. In the current economic climate, a lack of digital equity may also create affordability issues for some consumers where CAPs are protected from paying economically efficient prices at the expense of end consumers picking up the bill for investment costs.

5.5 Even if some protections are required there are far more proportionate means to achieve this

65. We have made the case that regulating to remove the ability to charge both sides of the market is unjustified. A more proportionate regime can unlock innovation and investment whilst also protecting the Open Internet. Internet 'fast lanes' already exist today without putting the Open Internet at risk. For example, larger CAPs with sufficient scale can embed their hardware in ISPs' networks to ensure the best customer experience for their customers (for example, by locating their hardware close to their customers). Such hardware solutions may not be easily accessible for smaller CAPs.

66. However, if Government/Ofcom have residual concerns, then there are many solutions that could be considered that are more proportionate than an outright ban on charging a side of the market. For example:

[31] In two-sided markets, the total volume of transactions, e.g. video streaming, depends not only on the aggregate price level charged to the two parties (CAPs and end-users), but also on how this charge is divided between them. The standard result of two-sided market economics is that pricing is based on the relative size of '**network externalities**' i.e. the benefit that one side obtains from access to the other side is directly related to the number of parties that are accessible on the other side. A welfare-maximising pricing structure will, absent a zero-price constraint, recover some of the telco investment costs from CAPs and end consumers, depending on the relative strengths of the network externalities and price-responsiveness on the two sides of the platform (or more formally the 'cross- group externalities'). See also Traffic management and 'net neutrality' - Ofcom.

a) A different approach to achieving good outcomes – for example, voluntary Codes of Practice or other types of self-regulation;
b) Guidelines with high level principles, as seen in South Korea, Singapore and UK regime pre-2016;
c) Targeted intervention to protect smaller players, such as a restriction to only permit charging of the largest CAPs (given Ofcom's own analysis acknowledges that larger CAPs have strong bargaining power); or
d) Minimum standards for basic internet access services - this could avoid some of the unintended consequences from today's net neutrality regime.

67. We do not consider that an outright ban on charging in two sided markets is justified. In addition to examples provided earlier in this section 5.2 we note app stores are expected to continue to be able to charge both sides of the market despite the CMA's and Ofcom's reviews, as long as these charges are not excessive (e.g. potentially not as high as 30% commission). There has been no suggestion that app stores should be completely prohibited from charging one side of the market at all, despite their Strategic Market Status; just an expectation that all charges are reasonable. This is in stark contrast to telecoms, where Ofcom has explicitly stated that fixed and mobile retail markets are competitive but two-sided pricing is still prohibited.

68. Another example of a more proportionate approach than an outright ban on charging a side of the market is Final Offer (pendulum) Arbitration (FOA), which has been applied where big tech players have been shown to have asymmetric bargaining power (e.g. Australian Broadcasting and Media Code). For example, in Australia, Google and Facebook have made deals with major news businesses when the threat of FOA has applied; and in practice arbitration hasn't actually been used (making this approach very resource-efficient for a regulator). This form of arbitration gives confidence that any value-based agreements would likely be successfully negotiated, most likely without the need for final arbitration, and hence represents a light touch approach. For the avoidance of doubt, we don't think FOA is necessary for the UK telecoms market (particularly because Ofcom has found no SMP in both fixed and mobile retail telecoms markets), but if policymakers consider some protections are required then FOA is a more proportionate response than an outright ban on charging CAPs . Moreover, if two-sided pricing became permitted in telecoms, then FOA could be used as a backstop to help resolve disputes between ISPs and CAPs which reach deadlock.

Appendix A BT answers to Consultation questions

Zero Rating

Question 1: Do you agree with our assessment of zero-rating offers and our proposed approach?

We welcome Ofcom's pragmatic approach to zero-rating. We ask for additional clarification on several definitions. Please see sub-sections 1.3 and 3.2 of our response for more details.

Question 2: Do you agree with the criteria we use to define Type One, Type Two and Type Three zero-rating offers and our proposed approach to such offers?

We broadly agree with the criteria used but ask for additional clarification on several definitions. Please see sub-sections 1.3 and 3.2 of our response for more details.

Question 3: Do you agree with the approach in our guidance in Annex 5 in relation to zero-rating?

We broadly agree with Ofcom's approach but ask for additional clarification on several definitions. Please see sub-sections 1.3 and 3.2 of our response for more details.

Question 4: What are your views on whether zero-rated content should be able to be accessed once a customer's data allowance has been used up?

The current guidance prohibits access to zero-rated content after a customer's general data allowance runs out. In our view, this is contrary to what consumers expect when they enquire about zero-rated passes. Please see sub-sections 1.3 and 3.2 of our response for more details.

Traffic Management

Question 5: Do you agree with our assessment of retail offers with different quality levels and our proposed approach?

We are supportive of the overall direction of Ofcom's proposals but ask for additional clarification on several points. Please see sub-sections 1.2 and 3.1 of our response for more details.

Question 6: Do you agree with the approach in our guidance in Annex 5 in relation to differentiated retail offers, including transparency requirements, improved regulatory monitoring and reporting of retail offers with different quality levels as well as the general quality of the internet access services?

We think the additional monitoring proposed by Ofcom is not proportionate and may cause unnecessary operational burdens. Please see sub-section 1.5 of our response for more details.

Question 7: What are your views on a more permissive approach towards retail offers where different quality levels are content and service specific?

We support a more permissive approach because we, like Ofcom, consider that it could be beneficial to permit content- and services-specific retail offers with different levels of quality. Please see sub-sections 1.2 and 3.1 of our response for more details.

Question 8: Do you agree with our assessment of how traffic management can be used to address congestion and our proposed approach?

Ofcom's proposals provide clarity on what traffic management practices are permitted in order to mitigate/prevent congestion. However, we think the constraints created by the rules themselves generate unintended consequences despite Ofcom's clarifications. Please see sub-section 1.4 of our response for more details.

We also think Ofcom could go further to incentivise efficient use of the network. Please see section 4 of our response for more details.

Question 9: Do you agree with the approach in our guidance in Annex 5 in relation to the use of traffic management to address congestion, including transparency requirements, improved regulatory monitoring and reporting of general network performance metrics, the use of traffic management and the impact on service quality?

We think the additional monitoring proposed by Ofcom is not proportionate and may cause unnecessary operational burdens. Please see sub-section 1.5 of our response for more details.

Question 10: What are your views on a more focused approach to traffic management to address congestion?

We strongly support a more focused approach to traffic management to address congestion. Please see section 4 of our response for more details.

Please provide any further evidence you have to support your responses

Specialised Services

Question 11: Do you agree with our assessment of specialised services and our proposed approach?

We welcome Ofcom's proposals for clearer and more flexible guidance on specialised services. To further support innovation, further clarifications would be helpful. Please see sub-section 1.1 of our response for further details.

Question 12: Do you agree with the approach in our guidance in Annex 5 in relation to specialised services, including transparency requirements, improved regulatory monitoring and reporting of the need for optimisation of a service, the general performance of internet access services and the impact of specialised services on the quality internet access?

We think the additional monitoring proposed by Ofcom is not proportionate and may cause unnecessary operational burdens. Please see sub-section 1.5 of our response for more details.

Please provide any further evidence you have to support your responses

Scope of the net neutrality rules, terminal equipment and public interest exceptions

Question 13: Do you agree with our assessment of the terminal equipment rules and our proposed approach?

We do not agree with Ofcom's proposed approach as we think good outcomes for consumers are being prevented/restricted by terminal equipment rules. Please see section 3.3 of our response for more detail.

Question 14: Do you agree with our assessment of internet access services provided on aeroplanes, trains, buses and coaches and our proposed approach?

We agree with Ofcom's assessment.

Question 15: Do you agree with our proposed approach to emergency 999 communications services and that we should consider amending the GCs to achieve this?

We agree with Ofcom's proposed approach.

Question 16: Do you agree that ISPs should be allowed to block scams and fraudulent content and provide in-network parental controls and content filters?

We agree with Ofcom's view.

Please provide any further evidence you have to support your responses?

Appendix B Confidentiality

We have highlighted all information we consider to be confidential in blue throughout the document and Table B.1 for ease of reference. Given the sensitivity of the information contained in this response, BT further considers that disclosure would be prejudicial to BT's business interests, accordingly, the confidential information provided should not be published or disclosed to any third party without BT's prior agreement.

We use the terms 'confidential' and 'confidentiality' to describe those business secrets or that commercial information (data or specific documents), the disclosure of which (either individually or on a cumulative basis or in combination with other information) may, or would, cause BT or another (for example a BT customer) harm, including harm to BT's or that other's legitimate business interests. The confidential information is provided to Ofcom on the basis that:

- Ofcom accepts such information as confidential and, subject only to section 393 of the Act or a written waiver of confidentiality from BT, will maintain confidentiality in respect of that information; and
- Should Ofcom, either on its own initiative or in response to a request from any third party, be minded to disclose information which BT regards as confidential, Ofcom will extend to BT at least 5 clear working days' notice of that intention, which notice shall include a full explanation of what information Ofcom intends to disclose and why Ofcom considers that that disclosure is necessary, proportionate and appropriate.

The information enclosed with this response has been provided on the basis that it will only be used for the purposes of this Notice, i.e. to progress Ofcom's work in relation to the Net Neutrality Review, and for no other purpose, unless otherwise agreed in writing by BT.

Page	Reference	Category	Comment

Table B.1. Confidentiality Schedule

Appendix C Evidence on which the rules are based and why an impact assessment is needed

The EU impact assessment justifying the rules was very limited and the world has moved on

1. A key justification for the 2016 net neutrality rules was to prevent ISPs blocking Skype (and other VoIP services). BEREC undertook preparatory work on behalf of the Commission (EC) to examine the nature of the problems and potential solutions including a survey in which some mobile operators were found to block Skype.[32] However, the EC's 2013 impact assessment[33] found that blocking was unlikely to be commercially sustainable over the long term due to reputational risk and customer churn.[34] Whilst the impact assessment flagged that the very prospect of blocking might deter innovation, this is a very thin justification for the extensive intervention that followed. The impact assessment did not assess either the impact of overly restrictive rules on investment or whether charging CAPs in a competitive two-sided telco market would be beneficial for innovation and investment.

EU legislative process is opaque and diverged from the impact assessment

2. When the EU net neutrality rules were introduced, there were different approaches that could have been taken including self or co- regulation. Indeed the impact assessment noted that divergent regulatory approaches were being taken across the EU. However, given the broader objectives at that time were to ensure a harmonised internal market, EU legislation was deemed the most appropriate way forward to implement the net neutrality rules. This objective no longer exists in relation to the UK rules.

3. The net neutrality rules are EU law based, the legislative process for which involved negotiation between the Commission, the Parliament (whose committees consider legislation in detail, propose amendments and advise the full plenary of Parliament on how to vote) and the Council (comprising the 28 Member States' representatives). That process meant the legislation underwent may changes reflecting the strongly divergent approach of different member states and their MEPs, the point being that it was a very political intervention that was not closely tied to evidence. Indeed, at time the UK was far from supportive of what was being proposed. [35] [36]

New impact assessment clearly needed that should follow best practice

4. Both the UK Government and Ofcom have published guidance on what a good impact assessment looks like. A good impact assessment should have a bias against intervention and consider a range of options for intervention including lighter touch approaches: For example:

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[32] Christopher Marsden (2017), European Open Internet Regulation, page 95

[33] European Commission (2013), EC Staff Working Document 2013

[34] The EC states "*Recognising that a business strategy based on blocking and throttling is unlikely to be sustainable over the long term, and exposes companies to possible reputational risk and customer churn, several companies have started to offer VoIP services themselves to promote loyalty and/or have shifted from "all you can eat" packages to capped offers to deal with the small share of customers who tend to be responsible for the bulk of traffic (e.g. through peer-to-peer). The impacts on revenues therefore are expected to be limited, the more so as voice revenue is anyway declining rapidly.*" EC Staff Working Document 2013, page 77.

[35] Vaizey set out the UK position in a letter to the Chair of the UK Parliament European Scrutiny Committee in May 2014: "*… the outcome of the EP First Reading deal was not as expected i.e. in line with the recommendations put forward by the ITRE Report…the result is that the EP First Reading now contains a specific definition of 'net neutrality', as well as a more restrictive approach to 'specialised services' and 'traffic management'. This is in direct opposition to HMG's current negotiating stance and underlines the contentious nature of this issue as previously noted in the most recent Commons Committee Report*". Ed Vaizey (2014) in Christopher Marsden (2017) European Open Internet Regulation_Marsden.pdf, page 98.

[36] Furthermore, it was argued on behalf of the UK government that the net neutrality situation:
"*may change but taking into account early indications of Member States' views in this area, we cannot rely on a change on the position from one where UK's [sic] remains relatively isolated in its opposition.*" Ed Vaizey (2014) in Christopher Marsden (2017), European Open Internet Regulation, page 99.

"One of our key regulatory principles is that we have a bias against intervention. This means that a high hurdle must be overcome before we regulate. If intervention is justified, we aim to choose the least intrusive means of achieving our objectives, recognising the potential for regulation to reduce competition."[37]

"[An impact assessment] summarises the rationale for government intervention, the different policy options (including non-regulatory options) and the impacts of the intervention, as well as quantifying expected costs and benefits."[38]

Ofcom hasn't - and rightly doesn't - claim to have taken that approach to net neutrality

5. Ofcom has been clear that its impact assessment is limited to options based on possible future changes to the guidance and not primary legislation governing net neutrality rules. For this reason, Ofcom's impact assessment does not consider options that would require changes to legislation, for example options to allow charging CAPs in competitive telecoms markets.

6. We note that Ofcom's impact assessment has not followed its own guidance in other key areas. For example:

   a) Ofcom assumes that since there has been innovation and investment in telecoms while net neutrality rules have been in place that these rules were a positive causal factor (when in fact innovation and investment may have been higher absent net neutrality rules such as restrictions on charging CAPs).

   b) Ofcom's assessment effectively reverses the burden of proof in terms of whether there should be regulation in that it gives little credence to the fact that competitive markets in general will deliver good outcomes. Rather than Ofcom requiring ISPs to set out clearly what the world might looks like in the future, Ofcom should be asking what theory of harm justify ongoing regulation.

[37] Ofcom (2015), Better Policy Making - Ofcom's approach to Impact Assessment
[38] BEIS (March 2020), The Better Regulation Framework BEIS

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