Vodafone Response to Ofcom consultation:

Net Neutrality Review

January 2023

Non-Confidential

Net Neutrality Rules fit for the future

1. We commend Ofcom for undertaking this review. It is an important and welcome step towards delivering a UK Net Neutrality regime that is fit for purpose. There is no doubt that the UK's approach to Net Neutrality would benefit from a fuller review, to assess whether the underlying legislative framework is fit for the future. Ensuring it is able to support the ever-expanding array of technology choices and accommodate the growing range of differentiated requirements consumers increasingly value.

2. Ofcom's consultation proposals are helpful, setting out where enforcement priorities should lie and giving greater clarity to all. However, whilst a more sympathetic and permissive interpretation will support innovation, Ofcom and the Government should take an evidence-based approach to review the current legislative approach to net neutrality, to ensure it can reflect the diversity that exists in technology and device capabilities, while supporting UK infrastructure to ensure the best consumer outcomes over the long term.

3. Ofcom's role in this process is a significant one. Of all the legislative, regulatory, and administrative bodies that are involved in shaping an appropriately balanced net neutrality regime for the UK, Ofcom have the most knowledge and practical understanding of how the market works and the impact on consumers and our economy.

4. It is for these reasons we are keen to see Ofcom play an active role, setting out clear views to Government around the scope of any legislative review and the opportunities that would flow from any sensible legislative reform that may come out of this. The real value in Ofcom's important work in this area will be its expertise in shaping a more fundamental, evidenced based review of UK net neutrality legislation, spanning the workings of the UK's digital and communications markets, while taking into account the needs of the wider economy to ensure the UK has a future focused regime that is well founded, flexible and aligned across all markets.

5. It is a hard fact that in economic terms, communication providers cannot be considered gatekeepers, being unable to exercise any market power to restrict access to their end users, nor prevent CAPs of any size disseminating content of any sort. The idea that any UK retail communications provider has the market power to block or throttle access to any leading CAP is not a credible one. Indeed Ofcom recognises the countervailing buying power that large CAPs hold over connectivity providers.

6. We can envisage no circumstances where communication providers would have sufficient market power (or indeed any incentive) to restrict or throttle access to large CAPS. Consumers would simply vote with their feet and move provider. The fundamental focus of any net neutrality regime must therefore be around safeguarding the rights of users (consumers and CAPs) to use the internet to access or disseminate whichever lawful content they choose.

7. Ofcom's extensive and ongoing efforts to make communication provider switching frictionless has created a highly dynamic internet access market in the UK. The reality is that UK consumers experience the internet

without influence until the curtilage of large internet platform ecosystems, only to find their internet experience manipulated (and outside the scope of net neutrality) once within those ecosystems.

8. The retail internet access market in the UK remains and will continue to remain highly contestable. The long-term trend firmly shows consumers are getting 'more for less', with the absolute unit price of data declining substantially over time.

9. Today's overly stringent net neutrality obligations rest unevenly on the shoulders of UK communication providers. In the context of looking to the future, this should be closely reviewed. This doesn't mean expanding the reach of the current rules into new markets, but it does mean the rules need to sensibly co-exist with new digital market regulation. Therefore, a review is needed to ensure the right rules are in place to reflect todays' market realities as we look forward into a more digital and connected future. This means sensible safeguards, balanced with the freedom to differentiate, and shape connectivity to match consumer expectations. It means efficient economic signals to help balance traffic and appropriately fund networks and it is about the freedom to introduce fairer end user tariffs, ending the practice that sees light users trapped in a regime that forces them to subsidise heavier users.

10. It is important to remember that Net Neutrality doesn't exist in a vacuum. The UK has a powerful suite of competition legislation at its disposal should genuine competition concerns ever arise. Looking ahead, an evidenced debate on how Net Neutrality might look like in the future is required. In the UK the debate has never been about the suppression of free speech that regrettably is a real concern in many countries. Thankfully, in the UK, Vodafone in common with other large communication providers remain committed to a free and an open internet, allowing consumers to access and distribute all lawful content. The discussion must centre on ensuring connectivity is better matched to need, fairly funded and able to be differentiated to serve the rich variety of applications and devices that exist while ensuring clear safeguards are in place to prevent discrimination.

11. The UK Government with guidance from Ofcom's should undertake a review of how the current legislation is performing, taking due account of its impact on consumers, innovation, and the UK economy. Much has changed since the current rules were introduced around seven years ago. Indeed even at the time of their introduction, Ofcom expressed deep reservations over their suitability for the United Kingdom, believing that additional EU legislation on this topic was unnecessary. Today internet market power concerns lie elsewhere, with large internet platforms the primary concern for end users.

12. Taking a global look, countries with a more proportionate and evidence-based approach to net neutrality appear to be enjoying better technology outcomes, with greater investment in networks. Even in the United States, the birthplace of net neutrality, since rules were set aside in June 2018 investment in networks is up substantially and there has been no evidence of any anti-competitive outcomes or damage caused to the interests of consumers in the absence of such hard coded rules[1].

13. It is simply not enough to leave net neutrality legislation alone and hope the CMA's Digital Markets Unit may eventually sort out the large internet ecosystems. There are a raft of new services planned that will provide a real test for the UK's communications networks. These services will gradually build on existing connectivity, but with features that place heavier demands on the network in terms of bandwidth and latency. Absent any change, the networks investment needed to support these innovations will be lacking

[1] See Strand Consult: Net neutrality (NN) regulation is failing UK consumers, innovators and investor [p.13/14]
https://strandconsult.dk/net-neutrality-regulation-is-failing-uk-consumers-innovators-and-investors/

and the inherent unfairness around funding will remain. Communication providers would love to better differentiate tariffs and to incentivise efficient network usage and Ofcom's tariff proposals based around a differentiated quality of service will help, but that is only one dimension. A further review is needed to ensure that it remains possible for communication providers to fully balance off cost drivers with efficient pricing signals and deliver services that are fair to all consumers.

14. Even today the unfairness of the regime is in plain sight. 4K streaming takes up around 4 times more bandwidth than standard High Definition. Streaming services routinely charge their subscribers more to watch in 4K. Yet none of that pricing premium finds its way to fund the considerable additional bandwidth cost needed to receive the service. While it may prompt some consumers to upgrade to a higher speed connection, there is no direct linkage to fund the additional bandwidth consumption. Again this means less financially able consumers are left to pick up the slack, with their per capita contribution subsiding these premium users network use.

15. This is unfair, particularly when you consider the modest additional costs to the content provider of offering the service, after all it's the same content delivered at higher bit rate. The true burden of the service falls to communication providers who receive no additional recompense due the UK's net neutrality rules. It would be much more efficient and fairer if the workings of what is naturally a two-sided market were not actively distorted by regulation and efficient pricing signals were allowed to exist unfettered in the market. Imagine every time you go into a restaurant you are forced to split the bill on a per capita basis with all the diners present, even if you only went in for a snack? This approach is neither sustainable nor fair, but this is exactly how net neutrality's one size fits all economics works out in practice.

16. As consumers we have become used to more differentiated approaches in other sectors. For example we have become very comfortable with off-peak and peak energy tariffs, which incentivise usage at different times of day (even more so recently given the focus on energy costs). Consumers are free to select a 24hr tariff with no time-of-day variation, or one that offers considerable off-peak savings, while having higher pricing during the day (perhaps a tariff linked to Electric Vehicle usage). We are not suggesting such a model would work for retail connectivity pricing directly to consumers, but it could apply to less time sensitive bandwidth hungry material disseminated from large CAPs, encouraging them to push out heavy software updates at off-peak times or make fair funding contributions when they introduce new bandwidth hungry products or rely on premium network features such as reduced latency.

17. We are at an inflection point. We are witnessing a massive increase in the absolute number and the variation in the range of connected devices available, reflecting ever more complex consumer needs, all of which are reliant on fixed and mobile connectivity. Maintaining a one size fits all ethos of the current net neutrality approach is not the best way to serve consumers. Networks need the flexibility to serve this ever expanding and differentiated market.

Q&A

Zero-rating

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

Vodafone welcomes the clarity Ofcom are seeking to bring regarding the permissibility of zero rating offers. During the pandemic, we witnessed first-hand how net neutrality rules were inflexible and acted as a barrier to common sense outcomes that would provide obvious consumer benefit. Only when informal assurances were provided that enforcement action would not follow, was it then possible for sensible decisions to be made around zero rating some types of content. The COVID pandemic was a high-profile event that prompted a swift response, but in other less prominent cases, there may not be sufficient urgency for regulators to come to a decision about a public good intervention, so providing a framework for the permissibility of certain actions is helpful. We firmly believe as well as the public benefit aspects, zero rating remains an important marketing and tariffing tool, valued by consumers that communication providers should be able to make sensible use of, provided certain safeguards are in place.

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?

Type One

Vodafone welcomes the increased clarity Ofcom have provided. Allowing communications providers the freedom to make choices around the zero rating of public sector content is a sensible decision. We believe Ofcom should make it clear in its guidance that the type one criteria should also be extended to not for profit organisations, including but not limited to charities and the third sector. This may well be what Ofcom envisaged under the banner of 'socially beneficial' in its draft guidance (Annex 5) but specifying not for profit organisations in the guidance would provide enhanced clarity.

Type Two

Open zero-rating offers are a valuable tariffing tool that benefits a range of different consumers. Allowing unlimited access to certain categories of commercial content is useful and provided the rules around participation are clear, there should be no barrier to this type of activity. Voxi[2], the Vodafone brand has developed a successful business model around this concept. It offers consumers certainty over their data consumption and allows a degree of package differentiation depending on their individual interests. The success of the brand has enabled Vodafone to launch the UK's first mobile social tariff, Voxi for now[3]. Communication Providers should be free to place the emphasis for their zero-rating tariffing where they choose, particularly given the wider context of the UK's highly competitive retail mobile markets. The public interest would not be served by prohibiting this degree of commercial freedom, something that is taken for granted in competitive markets.

[2] www.voxi.co.uk/
[3] https://www.voxi.co.uk/for-now

Type Three

We are mindful that any regulatory approach which involves subjective judgement can occasionally lead to inconsistent outcomes. However, we believe Ofcom must be open to allowing a variety of type 3 offers to enable different parts of the market to be served to deliver innovation and wider consumer benefit. We therefore welcome a more permissive approach, even for zero rating activities that would be classified as type 3. While Ofcom may choose to scrutinise type 3 offers more closely, when assessing these offers, Ofcom should only consider prohibiting them if there is clear evidence of consumer harm. There remains a place for niche and targeted tariffs that assist in promoting flavours of connectivity the appeal to a subset of consumers and content and application creators. Vodafone's DreamLab[4] application is a case in point. In conjunction with Imperial College London it seeks to harnesses consumer smartphone processing power while they sleep to analyse complex data in order to assist scientists identify treatments for cancer and COVID-19 . Zero rating this data would result in no competition concerns and should be permissible. Given the competitive retail landscape in connectivity the threshold for action should be a high one.

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

As indicated above, Vodafone is supportive of Ofcom's clearer and more permissive approach to zero rating. Enforced data uniformity is often unfair and discriminatory as it denies consumers the freedom of choice to pay different rates for different data or take up packages that offer features that matter to them. Consumers are no strangers to differential or real time pricing and many service apps make use of this concept (ride hailing and even take away deliveries). As stated above, we would welcome additional wording that included not for profit activities under type 1, freedom and flexibility around where to place marketing emphasis for type 2 offers (sitting alongside the transparency obligations around inclusion criteria) and reference to a consumer harm threshold for intervention on type 3 offers would be useful additions.

We have a procedural concern that Ofcom's proposed guidance refers out to BEREC material from June 2022. While we appreciate that this material may have a role to play in respect of the context and origins of the regulation, from an administrative perspective it complicates the readability of the reference material needed by Communication Providers to aid compliance. While the aim of the Ofcom's project to improve clarity, this may not happen if external guidance is also referred to. Key reference material should be contained in as few documents as possible and it is incumbent upon Ofcom to ensure its own guidance is both clear and comprehensive, ideally restricting it to Ofcom's guidance, the General Conditions and the underlying legislation.

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?

Vodafone welcomes the clarification around which sites can be accessed when a general data allowance has been exhausted. Any restrictions which act to prevent consumers from maintaining connectivity should be removed. Communication providers should be free to design their own to aid

[4] https://www.vodafone.co.uk/mobile/dreamlab

consumers maintaining connectivity. It would be unacceptable for consumers to be left in a situation where they could not access the platform necessary to maintain their connectivity, denying them the option to purchase additional data while on the move.

Traffic management

Proposals in relation to retail offers

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

Vodafone welcomes all steps to allow retailers to innovate, differentiate and compete on quality of service to provide a variety of tariffs and allow consumers to choose the one that best fits their needs and budget. The current approach to Net Neutrality, with an emphasis on one size fits all does not permit offers to be shaped to meet the variety of consumer need that exists. It results in less financially able consumers subsidising heavier users and any additional freedom to allow differential tariffs is to be firmly welcomed. Permitting innovation, differentiation and competition on quality of service is a welcome first step and we are keen to see more flexibility to enable better levels of product differentiation in the future.

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?

Offering consumers transparency at and ahead of the point of sale on the products and services they buy is to be encouraged. It helps consumers make informed purchasing decisions and aids the overall competitiveness of the market. However, any reporting requirements on communication providers should be proportionate. Ofcom should use its information requests sparingly, with requests clearly targeted. It would be a mistake to create a regular (or indeed operational) information burdens on communication providers, without an outcome based, targeted objective (such as investigating specific and well-founded concerns). The cost of providing this information is ultimately borne by consumers.

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

We want to see more variety in the innovative propositions valued by consumers that can be sold in retail markets. Given the variation in consumer priorities, the vast range of different devices and applications and the variations in consumer budgets, communication providers should have the ability to innovate and the commercial freedom to serve all consumers. Unless there are competition concerns and/or evidence of material consumer harm/detriment then Ofcom should not consider restricting such freedom as an administrative priority. Regulatory intervention in a competitive connectivity market that seeks to restrict the ability of providers to offer more targeted tariffing / propositions is an entirely unnecessary action and is completely at odds with Ofcom's desire to promote network investment, competition and innovation as the best means to serve consumers.

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

Ofcom should seek to adopt a more 'outcomes focused' approach to traffic management. Many traffic management practices will have an imperceptible or negligible effect on end users yet are currently prohibited (and will continue to be prohibited under Ofcom's latest proposals). Ofcom must remain mindful that the ability of Communication Providers to manage traffic effectively and efficiently is vital to protect both the reliability of services and fairness of access. Communication providers must have the standing ability to step in and prevent or deter network usage that threatens the overall consumer experience for all network users. Pre-emptive action to limit the certain activity which has the potential to undermine network performance is crucial. This includes taking action to restrict high intensity users from hogging bandwidth in times of network stress (or expected network stress). It is essential that mobile networks have the freedom to intervene where there is justification to minimise the impact of certain devices which consume large amounts of bandwidth (including actives involving tethering that may lead to a large rise in data consumption) should it be necessary.

Ofcom should clearly distinguish between one off event type 'congestion' caused in a particular location or due to particular event (such a major viewing event) from the daily or weekly peaks that occur in networks where there may be slowing down in speeds due to demand converging at a particular time.

It is vital that specialised services are excluded from these rules. Many of these services need to maintain connectivity in times of traffic congestion and so need to be protected from network congestion in full or in part. Communication Providers have a natural commercial incentive to ensure their networks are well designed and able to accommodate expected traffic flows. Congestion may occur from time to time, but networks in a competitive market setting are always keen to ensure the experiences of their customers are positive. Regulation should therefore not be needed in this area, as ensuring a good quality consumer experience will always be a priority of network providers.

Mobile networks in particular need to be able to effectively manage very heavy users. Unlimited tariffs remain a valuable tariff proposition, providing certainty to the bill payer, however specific users who seek to use the network on a high intensity basis (at levels well in excess of what could reasonably considered normal personal use) can cause network congestion. Communication providers need the freedom to apply fair usage policies to help manage this threat.

This may involve throttling particular end users who breach fair usage. Provided those fair usage policies are transparent and well founded and fair to all users, there should be nothing in net neutrality rules that prohibits communication providers freedom of action in this area. In any approach to Net Neutrality, policy makers must be mindful of the practical, technical and economic considerations open to mobile providers when seeking to respond to network congestion. Due consideration is needed around whether traffic management is indeed temporary. For example, if a mast is in congestion and if there are real economic or technically barriers that make it unfeasible to upgrade it (for example in deep rural locations with limited backhaul options). In such circumstances the congestion may not be temporary (absent infinite spectrum & capital) and sensible long term traffic management may be necessary to ensure the end user experience for all is protected.

It would be completely disproportionate and unreasonable for mobile provider to be required to spend +£250k on a backhaul upgrade for a rural mast in order to support one user with an LTE router that sucks up all the available bandwidth at that location and in so doing degrading the experience for other users. In the fixed world, the universal service obligation has a sensible connection cap beyond which connectivity is not funded. Without it, other users would be subsidising a host of incredibly expensive connections. In mobile, if a sensible approach to traffic management is not introduced, it will deter expansion of rural coverage, as operators will be reluctant to put in place coverage in areas that could quickly be exploited by very heavy users.

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 ser

Transparency measures are important to ensure consumers can make well founded purchasing decisions and we are supportive of the ability of consumers to find out how traffic is manged in certain circumstances. It is worth stressing that effective and sensible traffic management helps to reduce network costs, reducing the need to build capacity that would sit idle for most of the time.

In mobile networks, the finite nature of radio spectrum also must be carefully managed. In a competitive market all providers have a vested interest in delivering a positive network experience to our customers and these strong commercial incentives don't need to be replicated by regulation. Ofcom should aim to take a sympathetic approach to enforcement in respect of traffic management, again setting a high threshold for action, given the range of different applications/devices and consumer requirements that need to be balanced. It goes without saying the need to keep the public safe and to maintain the generality of user experience should not be overlooked.

Operators must be free to manage these events in a non-discriminatory way and there is should be no need for Communication Providers to provide Ofcom with reports of each such activity. This would be completely disproportionate, creating a burden for both Communication Providers and Ofcom. Ofcom should confine any reporting to matters where there is a likelihood or suspicion of harm. Ofcom should also be mindful that communication providers are not always able to classify every traffic flow into pre-assigned categories. This in itself acts as a natural obstacle to selective prioritisation by category or service and may hinder the ability of communication providers from exercising some forms of traffic management.

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

The more focused approach to traffic management outlined by Ofcom seems to revolve around geographic specificity through specific network parts or areas. A5.67 'Traffic management as described above can be applied to a particular part of the network (i.e. any specific link, node or combination of them)'. The guidance outlined provides sufficient measures to ensure that any consistent areas of network stress receive upgrades (where it is both practical and economic to do so).

Unless there are concerns around consumer harm, Ofcom should seek to take a more permissive approach and allow communication providers more freedom to undertake responsible traffic management to ensure their networks are efficient, economically viable and work for the greater benefit of all their end users.

Specialised services

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

The specialised service category is growing as applications and use cases develop with innovation and expanded network capabilities. We are keen to see very permissive guidance in this area, providing as much freedom as possible. As Ofcom develops its approach to network slicing, it must remain mindful that 5G / 6G networks are materially different from previous generations of mobile technology. Their development is much more closely tied to the need to monetise connectivity to support specific business applications, rather than delivering services to consumers.

Business demand for differentiated connectivity is even greater than in the consumer world. Business differentiation is needed to facilitate a range of use cases such as 'pay to play' models , which are often hindered by net neutrality. Slicing should be viewed as a 'platform' to offer various advanced services in a wide range of use cases. The finite nature of radio spectrum means that specialised services using slicing and Internet Access users are required to share capacity, (whether on static or dynamic basis). Ofcom must take a realistic and sensible approach when considering the matter of potential detriment caused to internet users from the presence of slicing. There remain strong commercial incentives on mobile providers to deliver high quality experiences to all their customers and there should be a high threshold set when considering what would constitute detriment.

It is regrettable that the current approach to net neutrality completely separates the concepts of content and the network. Slicing, on the other hand, facilitates a clear interaction between the content and the configuration of the network to meet the contents specific needs. It is no longer sustainable from a regulatory perspective to treat commercial and technical considerations as completely separate, as technical considerations can typically be reframed as commercial considerations, particularly where specific content or applications require specific forms of connectivity.

Ofcom must take a generous approach to slicing in the context of net neutrality, taking due account of the physical constraints and the economic reality of network provision. Any prohibitions should only be considered appropriate when harm can be demonstrated (or is realistically anticipated). An overzealous approach is likely to be counterproductive, denying or deterring businesses, consumers and the economy of a valuable seam of innovation that has the potential to provide considerable welfare benefits.

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 have some concerns around the practicability and burden of the evidence suggested by Ofcom as necessary to prove certain criteria. We wish to see a more permissive regime that is open and realistic about the benefits and realities of investment and innovation in network slicing, understanding the considerable benefit it can offer to UK businesses, end users and the economy.

For example, in order to prove that a service requires optimised treatment, it is not realistic for service trials to be conducted in every instance. This is an unnecessary burden on providers. While for technical reasons it may be beneficial to conduct a trial for some type of applications/services, this should be an exception and not a routine requirement.

We have a preference that Ofcom maintains a comprehensive (but not exhaustive) list of use cases that are prima facia considered to meet the criteria, where no additional material is necessary. This list could be updated from time to time, containing generic categories of applications where there is a clear presumption that it meets the criteria. This could include categories of service or application where there is a need for optimisation to ensure safety, security or functionality, for example in the areas of:

- Digital delivery of health and care;
- Emergency services;
- Real-time surveillance for public bodies;
- Transportation / connected mobility;
- Energy and utilities management
- Manufacturing;
- Smart cities
- Education and Training
- Transaction protection
- Media and entertainment.

In respect to the issues around the impact on the general quality of internet access Ofcom has indicates following steps could be taken to demonstrate compliance:

- Capacity planning has taken account of any forecast demand for specialised services / internet access services on the same network resource.
- Sufficient capacity has been maintained to continue offering quality of internet access, in light of forecasts
- Needs to be clear running service trials is not only option and there must be a range of ways of demonstrating this.

There are concerns that this will not be operationally practical and represent a disproportionate compliance burden that will deter the use of slicing. Instead the focus should be on network performance in aggregate, with KPI produced at regular intervals, to monitor performance pre and post the introduction of specialised services. Any performance concerns would be identified and investigated using the is process. It would only trigger action if there was evidence of significant degradation that was linked to the introduction of a particular slicing application(s) and not traced to other factors which may impact network performance from time to time. This process would tap into existing KPI production and network processes, and not seek to create additional bureaucracy and work.

Once Specialised services have been established we would take sensible steps to forecast their expected capacity usage. However, it is not appropriate for this to be done in *consideration* of the launch of a specialised service. In many cases we will not know the take up in advance and we need to respond to additional traffic demands after launch, particularly if take up is materially higher than anticipated. In such circumstances, capacity would be managed sensibly in line with evolving network demand .

<u>Scope of the net neutrality rules, terminal equipment, and public interest exceptions</u>

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

Net Neutrality's vanilla connectivity rules are no longer fit for purpose. With a huge and ever-growing range of different connected devices that have considerable variation in their connectivity needs, the inability to sensibly differentiate between different types of terminal equipment is increasing. The freedom and ability to flex and shape connectivity to better match device types is both efficient from a network perspective as well as fair to all consumers and taking due account of the variation in the connectivity needs of different devices. Nothing should prevent consumers using the terminal equipment they want, and it would be unfair to treat similar kit made by different vendors differently, it is however perfectly sensible to treat terminal kit that has very different purposes differently from a network perspective, provided that differential treatment is based on the needs of the network or the terminal equipment itself.

Going forward we would welcome a more realistic stance on the practice of tethering. We are disappointed that Ofcom has not sought to remove the ban on tethering restrictions. 'Tethering' allows a mobile user to share their mobile connectivity via Wi-Fi. It can lead to very high, unpredictable and often unstainable usage that makes the network difficult to manage from a capacity perspective, have the potential to negatively impact other mobile consumers.

With very high usage capacity devices tethered to mobile devices (such as PCs and smart TVs) this compromises the ability of mobile providers to offer unlimited tariffs at affordable prices as they will have limited tools to prevent tethering abuse occurring. US operators (including Google's MVNO) routinely offer lower cost packages with sensible tethering restrictions and there is no resulting consumer harm, indeed there is consumer benefit, from connecting to networks that can price tethering appropriately to ensure it is both funded and managed appropriately from a network capacity management perspective. We would urge Ofcom to take a more permissive, pro-competition and pro-innovation approach to tethering restrictions in the short term (not making its proportionate use an enforcement priority) and pushing for legislative change to allow mobile providers the commercial freedom to introduce tariffs with or without tethering restrictions as they see fit.

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

Given the connectivity challenges that are often present when seeking to deliver connectivity within a transport setting, Ofcom needs allow providers to offer considerable flexibility when it comes to managing the network to support connectivity. Sensible traffic management practices for transport settings which are aimed at providing a better quality user experience should not be prohibited and we would support Ofcom's proposals not to make any traffic management interventions aimed at boosting transport connectivity an enforcement priority.

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?

Vodafone supports all attempts to ensure that access to the emergency services can be maintained and all times and would support Ofcom's decision to review this aspect of the regulations.

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?

Yes. We need to maintain trust in communication networks and providers should not be prohibited from taking any action to minimise the harmful impact of scams/fraudulent content were legitimate concerns arise. Where filters have been established by consumers, they should be left free to configure these as they see fit, without net neutrality rules being a consideration.

End