Virgin Media Response to BEREC Consultations on:

- (Draft) Guidelines for Quality of Service in the scope of Net Neutrality, and;

- Differentiation Practices and Related Competition Issues in the Scope of Net Neutrality

Given the obvious linkage and overlap between the above consultations we have chosen, on this occasion, to combine our responses. For ease of understanding we have also sought to contain our submission to high level points of principle and broad issues, and those matters that we consider to be of most relevance to our organisation. For those aspects on which we have not commented, the absence of response should be taken neither as implicit support for or opposition to BEREC's suggestions.

Executive Summary

Virgin Media welcomes the opportunity to contribute to these consultations. It is important that NRAs have a sound and consistent set of principles against which to judge the potential exercise of their powers in respect of the regulation of the internet. It is also vital that stakeholders in the internet value chain have certainty around, and confidence in the approach that regulators will take. We therefore support the establishment of guidance and assessment criteria and would encourage BEREC to ensure that NRAs take a proportionate and considered approach when using them.

We consider however that there is no case for regulatory intervention at the present time. On the contrary, we do not believe that there are any issues or market factors existing at present which require the exercise of regulatory powers, let alone the bringing forward of additional legislation or the enshrining of net neutrality principles in to EU law. Indeed, the internet has evolved into the thriving ecosystem that it is today in the absence of regulatory intervention.

The internet access market is generally competitive across the EU – no more so than in the UK where the Government explicitly noted in its published broadband strategy that the UK has one of the most competitive markets in the world[1]. Consumers therefore have a good level of choice between different providers and services and this competitive dynamic, when combined with the enhancements to the transparency of traffic management policies/service restrictions that are being advanced in many Member States, will ensure that consumers can discipline ISPs that do not meet their expectations or requirements.

The further development of the markets and of the services and applications that are available to consumers over the internet requires a sustainable alignment of costs and revenues across the value chain. A correctly functioning market should achieve this without the need for intervention – inappropriate intervention now will serve only to distort incentives and inhibit innovation.

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[1] *http://www.culture.gov.uk/publications/7829.aspx*

In the broader context, NRAs must be alert to the impact that the approach to regulation of the internet has on network investments – and this is particularly pertinent to investment in competing, privately funded infrastructures. High capacity, future proof cable broadband products are today available to at least 50% of EU households. Moreover, cable operators have demonstrably provided the catalyst for private investment in competing broadband infrastructures by other providers. Intrusive regulation will serve only to undermine this competitive dynamic and will discourage future such investment. In this regard, we would emphasise the fact that the achievement of the Digital Agenda targets is critically dependent on sustainable investments. NRAs must therefore take a fair and proportionate approach to regulation that allows for innovation, permits investors to realise a fair return on their investments and does not present economic disincentives.

To the extent that practices that are harmful to consumers or competition in general do materialise, regulators have at their disposal a suite of tools under the recently revised European Framework and, where appropriate, ex post competition law. Any exercise of these powers should, however, be undertaken against the backdrop of a thorough and contextualized assessment of the specific circumstances. Furthermore, the bringing forward of additional legislation should not be contemplated until the updated provisions within the Framework have been fully implemented and afforded the opportunity to have effect.

We would also take this opportunity to highlight the fact that consideration of net neutrality issues and the openness of the internet should not be confined to the ISP domain. The potential to engage in practices that may raise competition or consumer experience concerns is not the sole preserve of ISPs – rather it exists across the whole internet value chain.

In the context of the ability of NRAs to impose a minimum Quality of Service ('QoS') obligation, we consider that this should be viewed as an intervention of last resort, to be exercised only when it has been proven that alternative, less disruptive remedies have not been effective, and following comprehensive assessment of the circumstances. As we have set out above, we do not believe that there is any requirement for the imposition of QoS obligations at the present time. We would further note that the more intrusive or technical forms of QoS obligation, such as minimum performance characteristics/parameters etc would not only be difficult to establish, but would also present considerable implementation and monitoring challenges.

In terms of differentiation and discrimination issues we similarly do not believe that there is cause for regulators to be overly concerned about harmful practices occurring at the present time. While we agree that it is of course important that NRAs monitor developments closely, pre-emptive or over zealous action in this regard risks inhibiting innovation and investment.

Overall, we consider that it is important that inappropriate, disproportionate or premature intervention is avoided. We consider that the prevailing competitive environment, together with the various transparency initiatives, will allow innovation and the realisation of additional consumer benefits, while at the same time providing safeguards against harmful practices. A proportionate and considered approach to regulation is vital to encouraging the optimal model of competing, private investments in infrastructure and is therefore critical both to ensuring further investment towards

achievement of the Digital Agenda targets and to the continued sustainability of investments in networks that have already been made. The manner in which NRAs approach the matter will have not just a short term effect but will shape the development of the sector over the next 20 or so years.

Introduction and Background

Virgin Media operates a communications and entertainment business and offers a "quad play" of broadband, fixed line telephony, mobile telephony and TV services to residential and (in relation to some services) enterprise customers in the UK. Our network passes approximately 50% of UK households and we have led the way in the deployment of NGA services, with customers across our entire network footprint having access to 100Mbit/s broadband services. We are in the midst of a program of doubling the majority of our customers' broadband speeds and continually investigate further measures by which to drive the advancement of NGA services and the take up of them.

As one of the UK's leading ISPs, Virgin Media is committed to an open internet whereby end users can freely access the lawful content of their choice. We are committed also to being open and transparent about the traffic management practices & policies that we apply – and in this regard have been instrumental, and played a leading role in, the Broadband Stakeholder Group's ISP own initiative Voluntary Code of Practice on transparency which has recently launched in the UK. In addition we believe that honesty and transparency around speeds and the performance and capabilities of end users' internet connections is critical, and goes hand in hand with traffic management transparency. Consumers deserve to know exactly what they are receiving for their subscription fees and should not be exposed to confusion or ambiguity around inferred theoretical 'up to' speeds which will never be achievable in practice. In this regard we recently launched a 'Speed Honesty' campaign via which we have committed to publish, on a monthly basis, the typical speeds that the majority of our customers actually achieve.
A number of our European counterparts are also developing similar initiatives - Cable is therefore pioneering improvements to transparency and openness and compelling other providers to follow suit.

In the broader context, we strongly support the overall objectives of the EU Digital Agenda and continue to make a substantial contribution to the UK's achievement of the Commission's broadband targets.

The pioneering, advanced NGA services that Virgin Media provides to its customers, and the corresponding contribution that we have made to the achievement of the Digital Agenda targets, demonstrate very clearly the advantages of privately funded, infrastructure based competition. Indeed it is widely recognised that such a model delivers the best results for end users and, while it may not be possible in all circumstances, should be the principal focus of NRAs' approach to regulation. The approach that is or may be taken by NRAs to the regulation of the internet is a critical factor in, and can have a material impact on, the business case for network investment. In order for these optimal outcomes to prevail, and to ensure that investments are sustainable, it is vital therefore that regulators take a consistent and clear approach and are not over zealous in their approach to the regulation of the internet.

Quality of Service

As we have set out above, we do not consider that there is a case at present for the imposition of QoS obligations. Furthermore, we consider that the prevailing competitive environment, combined with enhanced transparency measures, will serve to ensure that this situation continues for the foreseeable future.

Nonetheless, it is useful for BEREC to set out guidelines for NRAs to follow in their assessment of degradation of internet services and their consideration of how to deal with any harmful issues that do materialise. As previously mentioned, we have not responded to all elements of BEREC's document, rather we have instead commented on those aspects that we consider to be of most relevance or concern to us.

As a general observation however, we would note that degradation in and of itself is not necessarily a negative concept. Indeed, as BEREC has recognised, certain forms of degradation are necessary in order to manage networks/ensure network integrity and security and to enhance the experience of end users.

Contextualisation of Degradation

In Virgin Media's view, the need for robust and comprehensive assessment of each individual situation is critical. The imposition of a QoS obligation is a significant intervention and should be considered only as a measure of last resort, when it has been proven that alternative, less intrusive measures have been ineffective.

In particular, in their monitoring for degradation and evaluation of any particular situation, NRAs must in the first instance be clear on its cause. The performance of an end user's internet connection can be affected by a number of factors both inside and outside of the control of ISPs. In the case of the former, these range for example from the state of the user's in-home equipment and wiring, network characteristics (e.g. line length) and restrictions at points in the internet external to the ISP's network. In the case of the latter, degradation can be caused by the application of traffic management measures, the inability of available capacity to meet demand etc. NRAs must equally ensure that they have a full understanding of the impact of any degradation, the reasons for any action that may have been undertaken by an ISP and must have considered these factors in the context of the overall market and its prevailing characteristics.

Distinction between Different Types of Services

We note that in contextualising it framework for assessment BEREC draws a distinction between what it regards as general or open access to the internet, subject to reasonable traffic management ('Internet Access Services') and services that operate on the basis of being a walled garden and/or make extensive use of traffic management ('Specialised Services'). We consider that this high level distinction is perhaps too simplistic and fails to take into account other types of service that use the internet, or its technology, as a delivery mechanism. Implicit in this definition is the expectation that the two categories of service compete with one another for capacity (and that there is a corresponding risk that Specialised Services will be provided at the expense of the quality of Internet Access Services). While this sharing of network resource may well hold true in many instances, it will not always

be the case. There are a number of emerging services that separately use the internet as a delivery mechanism for audiovisual content but which are not marketed as, or provided as a part of, general internet access services. Moreover, these services are provided to customers via a discreet, entirely separate allocation of network capacity in the connection to the end user which does not compete for resource with the customer's general broadband service in this leg of the network.

For example, several Cable operators have launched hybrid TV services which combine traditional delivery of Cable TV services (via the DVB-C standard) with delivery of certain ring fenced content over the internet – such as Virgin Media's TiVo service. This internet content is delivered via a discreet, dedicated IP connection to the customer's set top box. It is provided on a stand alone basis and does not form part of, or utilise, any internet access product that the customer may also purchase. Moreover, it is not marketed as, nor does it provide, a general internet access facility (or put another way, it just happens to use the technology of the internet to deliver specific content to the end user, and does not compete for capacity with any general or 'best efforts' internet access product that the customer may also take).

Even though these hybrid services may be provided over the same underlying infrastructure as a customer's broadband internet connection, the capacity allocated to each of the services in the end user connection is partitioned, such that one does not encroach on the other.

(In this regard we would also draw BEREC's attention to the fact that the traditional Cable TV delivery mechanism (DVB-C) does not use internet technology to provide audiovisual content to end users. Moreover it is, similarly, provided over dedicated, partitioned capacity – or a separate logical path - and therefore does not compete for capacity with any internet access product that the customer may also subscribe to).

As such, we do not believe that such services are relevant to the assessment of degradation of internet access services. We would therefore ask BEREC to amend its guidance to take account of the fact that the above mentioned services should be outside of the scope of consideration and these should not be confused with services that utilise or share the capacity allocated to a customer's broadband connection.

Looking to the future, to the extent that Cable operators do develop specialised services that share capacity with internet access services, or are provided within the scope of an end user's general broadband connection, we do not believe that this should be a cause for concern. The existing high capacity of Cable networks, and the ongoing investment in this infrastructure, means that there is sufficient scope for internet access and specialised services to co-exist without issue – such that Cable operators are very well positioned to ensure that degradation of the former does not occur.

Criteria for Assessment of Degradation

We note that within its proposed assessment criteria, BEREC suggests that the relative level of performance (and thereby degradation) of 'best efforts' internet access as compared to specialised or prioritised services should be analysed. In Virgin Media's view, this is a mis-guided assessment. We consider that the most important criterion is the actual or absolute performance of internet access products, rather than their performance relative to specialised services. The focus of NRAs in this regard should be on establishing if those products deliver adequate performance

and therefore satisfy end users' requirements and meet their expectations. The level of performance of specialised or prioritised services is inconsequential in such an assessment.

In this regard we would draw BEREC's attention to the fact that the spirit of the revisions to the EU Framework is such that NRAs have been granted a competence to set minimum QoS in order to *prevent degradation of service* (emphasis added). It does not, in our interpretation, foresee a situation in which general internet access services should be provided to a comparable level of capability as specialized services.

We also note that BEREC recommends that practices that restrict or prioritise traffic should, in general, be application-agnostic. We do not believe that this suggestion fully takes into account the way in which internet networks function in practice. We would observe in particular that different services and applications are affected in different ways by the quality/capability of an internet connection and any congestion that it may be subject to. For example certain services (such as VoIP, video conferencing, gaming etc) are very time sensitive, whereas others (such as peer-to-peer file sharing) are much less sensitive to the time taken to convey data between the sending and receiving points.

Furthermore, ISPs need to manage what is after all a shared and finite resource to ensure a fair and equitable allocation of available capacity among their customer bases. The concentrated use of capacity intensive applications or protocols by even a small number of users can have a consequential effect on other users in a given area (or put another way, there is potential for certain end users to consume a disproportionate amount of the available capacity to the detriment of other users).

Certain bandwidth hungry services are not time sensitive. The customer impact of moderating their rate of delivery is therefore minimal. This is the case, for example, with certain peer-to-peer file sharing applications which can place appreciable capacity demands on a network and, ultimately, affect the experience of other users. The ability to regulate the flow of data in such circumstances enables ISPs to ensure a fair apportionment of available capacity among all users.

By the same token, the prioritisation of time sensitive applications (or the de facto prioritisation via moderation of other services) can enhance the consumer experience. For example, acceptable use of a VoIP or video conferencing application requires a minimal level of delay – and reducing the extent to which such services may be affected by congestion ensures that there is a much greater chance of them functioning to the end user's required standard.

Conversely, far from representing the optimal approach, application agnostic traffic management, or the blanket management of all applications could conceivably deliver worse outcomes for end users. That is, given that by definition all applications would be affected by a moderation of throughput at a generic level, it is possible that time sensitive applications could be affected to the extent that they are not useable. Moreover, the application of traffic management techniques at a generic level presents a risk that far greater numbers of end users will experience adverse effects as compared to a lower percentage who may be affected by the application of specific traffic management. This is not to say however that network level traffic management does not have a role to play – for example in the case of exceptional events or unanticipated spikes in demand.

Application or protocol specific traffic management, when applied in appropriate circumstances, should not, therefore be frowned upon or indeed prohibited. Rather, NRAs should assess thoroughly the circumstances in which such practices are undertaken and should consider in detail its effects.

Overall, it will likely be the case that good network management practice should encompass responsible use of both application specific and application agnostic traffic management – and NRAs should have this concept in mind when assessing the actions of ISPs.

<u>Technical and Practical Challenges</u>

We would also draw BEREC's attention to the practical and technical challenges inherent in minimum QoS obligations – particularly those more intrusive measures that mandate compliance with specific quantitative or technical requirements. These challenges extend, in our view, across the setting, delivery and indeed monitoring of the obligation. For example, the means by which the level of a minimum quality requirement would be set are not clear. The factors that would influence or inform such are, in many respects, subjective – and the setting of what constitutes an acceptable or minimum level of service could be contentious. In this regard, given the rapidly evolving nature of the internet, it is also likely that any parameters that were set could very quickly become outdated. Conversely, it could result in a situation in which providers gravitate around the 'bare minimum' level of service and, outside of specialised services, have little incentive to improve or upgrade the experience of the basic user.

Moreover, the different types of network over which internet access is provided demonstrate different characteristics and capabilities. It would therefore be challenging and possibly inappropriate to attempt to establish a ubiquitous minimum level of service applying across all network types. This suggests that some sort of differentiation by, or at least recognition of, the different types of technology in use might be considered or envisaged. This would clearly lead to a risk of generating competitive distortions in the market resulting, ultimately, in unfavourable outcomes for consumers.

Finally, we believe that there would be significant practical difficulties associated with monitoring and enforcing a minimum quality of service level. For example, traffic management has by its very nature dynamic and reactive elements. In addition, there are a number of other factors that can affect the performance of an end users' internet connection, many of which are outside of the control of ISPs, and which may be difficult to distinguish from the effects of, or may interfere with the monitoring of traffic management. Compliance with a minimum quality of service obligation – not to mention the monitoring of that compliance – could therefore be something of a moving feast.

In the wider context, we are also concerned that the imposition of a minimum quality of service obligation could be used as a tool for satisfying other objectives by stealth, or could in the alternative conflict with them. For example, a remedy requiring the provision of a minimum level of service may share many characteristics with a Universal Service obligation. The mechanisms for establishing the latter, not to mention the circumstances and criteria leading to it, are distinctly different to those applying to a minimum QoS obligation that is being considered in the context of addressing the degradation of internet services.

This emphasises, in our view, the need for NRAs to approach any consideration of imposing a minimum QoS obligation with great caution and for a comprehensive assessment of the prevailing circumstances and market conditions to be undertaken.

Differentiation Practices and Related Competition Issues

As we have set out above, Virgin Media considers that there is no case at present for greater regulatory intervention in respect of differentiation practices on the internet, or for that matter any justification for the establishment of specific net neutrality legislation. We do, however, believe that BEREC has, in general, captured the key aspects that should be taken into account in any assessment of the situation and the factors relevant to any consideration of the use of remedial measures.

The internet ecosystem is still relatively nascent and continues to evolve at a notable pace. Moreover, the market for retail broadband services remains competitive, with consumers having a good level of choice of both provider and types of service. As such NRAs must avoid the imposition of restrictions that will inhibit innovation and disincentivise investment. In this regard, the provision of differentiated services, the establishment of new commercial charging models and provision of different levels of service quality must be allowed to prevail.

Clearly, if harmful competition problems do emerge, NRAs must act to remedy the situation. However blanket, or general restrictions will serve only to limit the development of new services and reduce the options available to end users. Rather, NRAs must deal with competition or other issues of end user harm on a case-by-case basis, taking into account the specific facts of the matter. We would further observe that the tools to effect this are readily available via the recently revised EU Framework (and, where appropriate, established competition law).