Ofcom Traffic Management and 'net neutrality' Consultation Response
Dr. Gernot Pehnelt (GlobEcon)

Question 1: How enduring do you think congestion problems are likely to be on different networks and for different players?

As the Ofcom Discussion Document on Traffic Management states, global internet traffic has been increasing, and will continue to increase for the foreseeable future by 40% a year. Data streaming on the Youtube website is equivalent to all the data that existed on the internet in 2000. This sustained growth is compounded by increasing access and increasing use and popularity of internet content and applications. However, it is important to note that in the midst of this growth, use that does not require high quality of service (checking email, reading the news, etc) continues to be the primary purpose for internet access among a majority of internet users. As a result, a high proportion of bandwidth is being used by a minority of users.[1]

The growing demand for high bandwidth, and the need for differing levels of quality of service (e.g. low latency), illustrates the need for providing a tailored approach to traffic management, so as to most effectively use existing capacity. By doing so, ISPs will be able to both provide a guaranteed quality of service (a requirement for quality sensitive applications, such as VoIP telephony and streaming video) to those that wish for it.

Demon Internet, a UK ISP, is seeking to do this very thing through its broadband dedicated to gamers.[2] *By providing the necessary bandwidth to ensure high quality of service, gamers are more likely to subscribe to this ISP, relieving the strain on other networks that do not wish to provide such a tailored approach, and allowing them to focus on other services.*

The problem of congestion is even more important in mobile Internet applications since a single cell can only handle a certain amount of data at the time. Because of the tremendous growth of mobile applications due to smart phones, ISPs might have to implement appropriate business models and introduce technical solutions in order to provide a high quality of service for their customers aligned to the very needs of different applications and users.

Question 2: What do you think are possible incentives for potentially unfair discrimination?

Basically, there is no incentive for introducing unfair discrimination. It contradicts the entire purpose behind internet access, that being access to the global content. Virtual private networks (VPN) have sprung up in countries where this universal access is not offered (Iran, China, etc), and would likely also be developed should limitations be placed on access in the UK.

Such unfair discrimination has been put into practice in a highly limited capacity, particularly in the US, though also with Skype on UK mobile networks. This has been an issue for concern, and has been addressed in the context of existing competition law.

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[1] http://www.guardian.co.uk/technology/2010/jun/11/mobile-data-unlimited-end
[2] http://www.telegraph.co.uk/technology/broadband/7960193/Special-gamers-broadband-package-launched.html

Once a decent level of competition among ISPs and content providers is in place, unfair discrimination is very unlikely to occur. I addressed this in my report, "The Economics of Net Neutrality Revisited", and emphasized that existing anti-trust regulation is sufficient to enforce competition on the internet.[3 or 4]

Question 3: Can you provide any evidence of economic and or consumer value generated by traffic management?

Shaping traffic presents a tremendous benefit to internet users, particularly as this will both promote the use of quality sensitive internet content and applications, which in turn will support content and application providers. This is especially the case for any live application such as online-games, live-streaming, video conferences and the like. Rather than constantly having to wait for video to buffer, which degrades the experience and turns off users from the site/service, videos will be able to stream seamlessly.

In addition, by charging content and application providers for prioritization of traffic, the cost burden of maintaining and increasing infrastructure will be more proportionately born by those demanding and creating the demand for data. After all, is it reasonable for internet users, particularly those who simply check email and read the news, to subsidize Youtube or Skype?

Question 4: Conversely, do you think that unconstrained traffic management has the potential for (or is already causing) consumer/citizen harm? Please include any relevant evidence.

There is absolutely no doubt that the existing "best-effort" framework under which ISPs currently operate is insufficient to the growing demands of both content and application providers, as well as users. Examples of discrimination against competing services (such as VoIP) have taken place, but should not be confused with circumstances when peer-to-peer file sharing has been throttled.

On the one hand, limiting or degrading access to a competing service is a clear example of unfair discrimination, and should be strictly discouraged. It is also my hope that existing transparency regulations will also inform consumers of these practices, both discouraging ISPs, as well as providing the necessary information for consumers to select from a competing provider.

However, throttling peer-to-peer (P2P) services is entirely separate, and illustrates a breakdown in copyright enforcement and the ensuing lack of proper regulatory clarity. On the one hand, throttling P2P is reasonable as they pose a disproportionate strain on bandwidth, and are not quality sensitive. As a result, during peak hours, P2P services, used by a small number of users, has a disproportionate impact on the networks. In addition, ISPs are concerned by the conflict between copyright owners and the possibly illegal file-sharing that is taking place through these services.

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[3] http://www.globecon.org/fileadmin/template/userfiles/Net_Neutrality/JERPnetneutralityPehnelt.pdf

[4] http://zs.thulb.uni-jena.de/servlets/MCRFileNodeServlet/jportal_derivate_00162857/wp_2008_080.pdf

In my paper "The Economics of Net Neutrality Revisited", I show that quality sensitive (high-value) services might be crowed out by low-value, bandwidth intensive services that have comparably low quality sensitivity. As a consequence, this could seriously affect innovation and the development and break-through of new quality sensitive services, e.g. in telemedicine.

Question 5: Can you provide any evidence that allowing traffic management has a negative impact on innovation?

As traffic management practices are still in their infancy, and ISPs continue to await the decision of regulatory authorities on this issue, there is no evidence to suggest that innovation will be negatively affected.

However, economic analysis shows that degraded quality of service, which will be inevitable should net neutrality regulations be introduced, will entrench incumbent content and application providers. Large incumbents in the content and application industry have already learned how to manage traffic internally so as to provide minimal disruption once data streams to consumer networks.

What ISPs are seeking to provide by introducing traffic management is the same ability to efficiently transmit data, but through their own networks, decreasing the start-up costs for quality sensitive content and applications.[5]

Therefore – as argued above - , traffic management will effectively SUPPORT innovation, while net neutrality will allow incumbents to dominate the existing infrastructure.

Question 6: Ofcom's preliminary view is that there is currently insufficient evidence to justify ex ante regulation to prohibit certain forms of traffic management. Are you aware of evidence that supports or contradicts this view?

The lack of evidence supports this view, and without allowing ISPs the opportunity to put traffic management into practice, it continues to be impossible to justify increasing regulation.

Neelie Kroes explained it perfectly, when saying that the current debate appears to be a solution in search of a problem.[6]

Question 7: Ofcom's preliminary view is that more should be done to increase consumer transparency around traffic management. Do you think doing so would sufficiently address any potential concerns and why?

Yes. By providing users with all the necessary information on management practices, users will be fully informed on what to expect in terms of quality of service, and whether a network is right for their purpose.

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[5] http://www.theregister.co.uk/2010/08/09/neutrality_new_net_hypergiants/

[6] http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/153&format=HTML&aged=0&language=EN&guiLanguage=en

Consider Demon Internet's recently announced broadband for gamers. By fully informing users of the parameters of their traffic management, and insuring quality of service for gamers, that network is ideal for those who wish to focus their internet use entirely on gaming. However, it would not be suggested that the same network be used by those who wish to access P2P networks, as their downloads will be not be given the necessary bandwidth that they would prefer.

Question 8: Are you aware of any evidence that sheds light on peoples' ability to understand and act upon information they are given regarding traffic management?

This will have to be further explored as providers implement such management practices.

Question 9: How can information on traffic management be presented so that it is accessible and meaningful to consumers, both in understanding any restrictions on their existing offering, and in choosing between rival offerings? Can you give examples of useful approaches to informing consumers about complex issues, including from other sectors?

First of all, traffic management practices have to and will be part of the contract between ISPs and their customers. Right now, there are very different tariff models in place, both in Internet and mobile services. Consumers seem to be well aware of these differences and choose the model that serves their very needs best. The same transparency can be expected when it comes to the introduction of traffic management systems. Furthermore, as the Demon Internet's example shows, users can be fully informed about the parameters of their traffic management.

Question 10: How can compliance with transparency obligations best be verified?

Consumer protection laws and regulations are already in place and could be easily shaped along the needs of traffic management systems. Again, a decent level of competition on every level of the market for internet services will prevent any discriminatory policies since consumers – especially Internet users – are well informed and will not accept non-transparent and unfair policies.

Question 11: Under what circumstances do you think the imposition of a minimum quality of service would be appropriate and why?

The simple economics of the broadband market make minimum quality of service requirements an unnecessary regulatory burden on an industry which is entirely dependent on maintaining minimum quality of service standards that would very likely exceed those imposed by government.

"Perfection is the enemy of good enough".

Network operators must be allowed to deploy their infrastructure far and wide, laying the groundwork for any subsequent upgrades and/or next generation networks. Operators will only deploy such infrastructure if the minimum quality of service they can offer will be useful to users

and businesses alike. Otherwise, they will be developing a service that no one will want, much less pay for.

And yet, if regulation is introduced that increases the cost of this infrastructure deployment, and therefore the subscription costs that users will have to pay in order to use the service, individuals will be less likely to subscribe.

Network operators should start small, create the infrastructure, and improve upon it, rather than building a prohibitively expensive network to which people will not subscribe.

Again, if consumers have the right and possibility to choose and change, any provider who wants to successfully conquer a market and 'survive' will need to assure a certain level of quality for the customer. Only if there is a lack in competition (e.g. just one (public) incumbent), special rules beyond competition law might be necessary.