
Intellect response to Ofcom Discussion Document Traffic Management and ‘net neutrality’

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About Intellect

Intellect is the UK trade association for the IT, telecoms and electronics industries. Intellect represents over 750 companies ranging from SMEs to multinationals. Membership includes contributors to the creative industry and technology providers whose hardware, software and services provide access to content over the internet.

Introduction

Intellect thanks Ofcom for their timely discussion document which clearly sets out the different technical and commercial issues which need to be considered when thinking about net neutrality. We note the discussion about definition of traffic management and ‘net neutrality’ and to set the scene have repeated it below:

- *The term ‘traffic management’ refers to a range of different techniques that network operators and ISPs use when they think there is a need to either restrict or ration traffic or give priority to some types of traffic over others.*
- *There are various definitions of ‘net neutrality’. All see discrimination by network operators and ISPs between traffic as the core problem which ‘net neutrality’ policies should address. The purest version of ‘net neutrality’ assumes that:*
 - *there should be no prioritisation of any type of traffic by network operators; and*
 - *those providing content, applications and services via the open internet should not be charged by network operators/ISPs for the distribution of that content to the network operator/ISPs’ customer base.*
- *In practice though many advocates of ‘net neutrality’ argue for a more nuanced policy than this. The debate has focused on whether network operators and ISPs should be allowed to block or degrade traffic using traffic management techniques, or (conversely) charge consumers, service providers or both for a certain guaranteed quality of service.*

Russell Square House
10-12 Russell Square
London WC1B 5EE

T 020 7331 2000
F 020 7331 2040
www.intellectuk.org

As Ofcom states the internet is central to the citizen, consumer and business. It provided both a huge social and business benefit and the world's economic growth is highly dependent on it. Clearly many of the Internet's benefits come from its open nature and the ability of anyone to develop new and innovative devices and services that connect to it.

The different players can roughly be divided into three groups:

The Communication Providers (network operators and ISPs): who provide the pipes that deliver the content and services? In most of the UK this is a competitive market. CPs are looking to differentiate themselves from their peers as well as at new business models to fund the costs involved in updating their networks.

The Content, Service and Application Providers who want to reach out to as many consumers as possible and in many cases charge for their products. It is important to the content service and application providers that the consumer has a good experience when using their products

Consumers who are looking for choice, a good experience and value for money

Current business models usually find both the 'communications providers' and the 'content, service and applications providers' in separate commercial arrangements with the consumer. However new relationships are starting to emerge especially around choice of content and applications, and quality of service. "Content, service and applications providers are building relationships with the "communications providers" and consumers are willing to pay for a superior user experience. In Intellect's view it is important to let these relationships develop within the normal bounds of consumer protection and competition.

Regulators should be careful not to intervene to favour one particular set of actors in what should be a commercial legitimate negotiation, unless there is an identifiable market failure or abuse of dominant position.

General Comments

Intellect fully supports an open and innovative internet.

Whilst the ideal situation would be for all packets of information to be passed through the internet without delay we realise that there are time when the "pipes" will become congested and that some traffic management is needed. Indeed without traffic management the user experience could become quite unacceptable.

Intellect supports the principles which are now embedded in the revised Framework Directive, which establishes that national regulatory authorities shall promote the interests of the citizens by "promoting the ability of end-users to access and distribute information or run applications and services of their choice¹".

We also believe an "open" and competitive Internet must include the ability of network operators to innovate within the network so it must permit network management and managed services to offer consumers additional choice through tiering, quality of service, security services, and other network management techniques. Network operators must also be able to offer additional services that are not of an Internet character eg high quality streaming TV from network caches close to the users.

¹ Article 8g Revised Framework Directive

In Intellect's view, the ultimate goal should be to maintain an open internet and permit networks to be adaptively managed to optimise the needs of different subscribers and applications without jeopardising consumer protection or competition.

The UK has a highly competitive ISP market (unlike the US) which Intellect believes is sufficiently competitive to deter harmful conduct. Service providers are indeed disciplined by the competitive market, and the need to retain and add customers by responding to consumer demand.

Intellect further believes there are sufficient tools within the competition and sector-specific framework to safeguard an open internet, protecting consumers and competition.

It is also Intellect's view that transparency is paramount. This is essential for the design of a service, to compare ISP's and to manage expectations. This transparency must cover all kinds of traffic management be it to manage periods of high congestion to blocking content.

In contrast with other jurisdictions, the European regulatory framework provides Regulators a direct authority over the provision of electronic communications services, including broadband services. In the context of the new Directives, as outlined by the Commission in its consultation document, there are also specific provisions that have been agreed in order to ensure an open internet. In addition to the connectivity principles, new transparency rules have been adopted, to ensure consumers are aware of any limitations in their broadband service plans. Finally, a new reserved power is granted to all Regulators in order to impose minimum quality of services to prevent degradation or slowing of traffic over networks. We believe all these tools allow Regulators to intervene and address potential detrimental behaviour.

In our view, it is important that broadband providers should retain broad discretion to employ necessary network management techniques, and the ability to develop and offer innovative new managed services to customers who value these products. Likewise, it is important that providers retain the ability to engage in two-sided or multi-sided business models, involving service providers, application or content providers, and consumers. These types of arrangements can be both more efficient and equitable, and reduce broadband costs for consumers and increase adoption.

Response to the Questions

- i. How enduring do you think congestion problems are likely to be on different networks and for different players?*

There will always be congestion problems on all networks at one time or another. The areas of congestion can be summarised as follows,;- access network, backhaul network, internet core and the service or content providers servers. Each element is incremented in discrete chunks. For some elements eg the access network, these upgrades take longer than others. It is impractical for every element to be non blocking for 100% of the time due to the fluctuating traffic demands and each ISP has to decide what blocking level their customers will accept.

- ii. What do you think are possible incentives for potentially unfair discrimination?*

Intellect believes there are sufficient tools within the competition and sector-specific framework to safeguard an open internet, protecting consumers and competition. However they do have to be applied wisely and the current work on the throttling some types of traffic eg P2P is an area where further thought is required. In the rush to stop illicit P2P downloading with traffic

management there is a risk that legitimate P2P could become blocked. As cloud computing and SaaS become more ubiquitous, this legitimate P2P and encoded traffic will naturally increase.

iii. Can you provide any evidence of economic and or consumer value generated by traffic management?

Traffic management happens today most commonly during periods of high congestion. In most cases it is used to prioritise that traffic most sensitive to IP packet loss and delay. Without such management user experience could be significantly impaired. In addition, efforts to overcome congestions are encouraging innovation in data handling.

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

Yes there is potential for traffic management to be used indiscriminately to give preference to one content provider's traffic over another. The US Comcast example of restricting users of file sharing sites is one such example. However the sensible use of traffic management can benefit consumers in times of congestion.

v. Can you provide any evidence that allowing traffic management has a negative impact on innovation?

Not having a guaranteed quality of service could be a technical barrier to the development and provision of some types of content and business models.

There are already some examples of a content owner paying for content to receive different treatment eg sponsored links and this is now an established practice. There is some concern that if content providers had to pay for quality of service this could be a barrier to smaller companies and start-ups who would not have the funds and those who might not be able to accept the financial risk thus stifling an innovation stream. But there is no evidence that this is a problem and there may be intermediaries willing to assist on a revenue-sharing basis.

On the other hand the possibility of problems due to congestion has already encouraged innovation around quality of service and the development of tools and mechanisms to take out bottlenecks. There has also been significant investment in infrastructure eg Content Delivery Networks and caches which hold copies of data locally and can cut down time of travel by allowing the consumer to access the copy nearest to them.

vi. 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?

Intellect sees no reason to introduce preventative legislation to prohibit certain forms of traffic management

Intellect is of the opinion that the provisions in the Universal Service Directive are sufficient to address transparency requirements. In particular Art 20 (b) which gives end users the right to "information on any procedures put in place by the undertaking to measure and shape traffic so as to avoid filling or overfilling a network link, and information on how those procedures could impact on service quality" together with Art 21 (3) d which gives national regulatory authorities the possibility to oblige undertakings providing public electronic communications networks and/or publicly available electronic communications services to "provide information on any procedures put in place by the provider to measure and shape traffic so as to avoid filling or overfilling a network link, and on how those procedures could impact on service quality" provide a clear legal basis for transparency.

As the Universal Service Directive gives Member States in Art 22 (3) also the possibility to enable national regulatory authorities to set minimum quality of service requirements in order to prevent the degradation of service and the hindering or slowing down of traffic over networks, Intellect thinks that the legal basis for transparency requirements is granted.

- vii. *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?*

Intellect agrees that more should be done to increase consumer transparency around traffic management. The consumer should have enough information to make a considered purchasing decision. Information is also needed to manage consumer expectation. This may also have the added benefit of smoothing out congestion as consumers may change the time they make heavy demands in order to save themselves time or money.

- viii. *Are you aware of any evidence that sheds light on peoples' ability to understand and act upon information they are given regarding traffic management?*

There has been a lot of publicity recently about the threatening consumers who persistently illicitly download content with a degraded service.

- ix. *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?*

Industry and government recently tackled a similar question when looking at how to define broadband speed to the consumer and suggested that the best way might be to list the services that could be delivered eg "stutter free iplayer".

Perhaps we could standardise on a list of services against which communication providers could bench mark. Eg streaming video, gaming, controlling equipment (for remote operations) It is possible that increasing the level of consumer's understanding of the time variation of traffic management may have the effect of smoothing demand a little like encouraging commuters to travel outside peak hours because they could get a seat.

- x. *How can compliance with transparency obligations best be verified?*

The purpose of consumer transparency is to enable the consumer to understand the impact that traffic management policies might have on the user experience. This will allow the consumer to make an informed choice when purchasing broadband and also when purchasing goods or services delivered over that broadband service. It is also necessary for the broadband provider to keep the consumers up to date with any changes to their traffic management policy and the effect that these changes might have.

Acceptable quality of service depends on the nature of users' applications and service use and is something that will change over time. Where some users may have a 24Mb/s connection and be unhappy with the quality of service others may have 1Mb/s and be content. Such judgements are thus subjective as well as objective. They will also keep changing as broadband speeds increase, as application and online services become more bandwidth intensive or sensitive to other network measures such as latency.

Intellect suggests that compliance with transparent obligations needs to be verified with a twofold approach undertaken in the form of a questionnaire to both the communications provider and their consumers. Essentially the communications provider should show that it has made the relevant information available in a suitable manner but for transparency to be met the consumer must feel that the information received has been delivered in a useful and appropriate form and in a timely manner. Just to make information available is not enough. Consultations with network user groups about satisfaction with 'best efforts' or 'acceptable

efforts' class of performance would also be beneficial in helping to understand where guidance be positioned and how it should change over time.

- .xi. Under what circumstances do you think the imposition of a minimum quality of service would be appropriate and why?*

Intellect does not support the imposition of a minimum quality of service. Proper transparency will allow the customer to choose a broadband provider with a quality of service fit for their purpose. Some applications are more sensitive to quality of service than others eg low latency or a high level of connectivity may be of importance.

Quality of service can differentiate ISPs and could influence the selection of one ISP over another and encourage competition. This would have most value if it became easier to change ISP. Currently penalties to exit a contract early and a possible unaccepted loss in connection can deter switching but Intellect would not favour allowing consumers to exit a freely agreed contract unless a significantly detrimental change had been made by the ISP. Quality of service is important to some application providers who have a vested interest in the consumer experience and will have to design around a quality of service

As part of the transparency work it is necessary for consumers to understand that quality of Service from the ISP is not the whole of the story. The consumers wiring and equipment, the content delivery network, server capacity etc all have a role to play and these are not under the control of the ISP.